Which part of air is involved in the combustion process?

Select one:
a. Carbon Dioxide
b. Oxygen
c. Moisture content
d. Nitrogen

Feedback

Your answer is incorrect.

The correct answer is: Oxygen

Question text

What is the primary cause of incomplete combustion when the appliance is firing at the correct input?

Select one:
a. too much air
b. too much gas
c. lack of air
d. lack of gas

Feedback

Your answer is correct.

The correct answer is: lack of air

Question text

The products of complete combustion are:

Select one:
a. heat, carbon monoxide, water vapour and nitrogen
b. heat, carbon dioxide, water vapour, and nitrogen
c. heat, carbon monoxide and, water vapour
d. heat, carbon dioxide and carbon monoxide

Feedback

Your answer is incorrect.

The correct answer is: heat, carbon dioxide, water vapour, and nitrogen

Question text

How many cubic feet of combustion air is required for every cubic foot of propane gas?

Select one:

a. 25 cubic feet $0.71\mathrm{m}^3$ $0.71m3$
b. 10 cubic feet $0.28\mathrm{m}^3$ $0.28m3$
c. 32 cubic feet $0.91\mathrm{m}^3$ $0.91m3$
d. 16 cubic feet $0.45\mathrm{m}^3$ $0.45m3$

Feedback

Your answer is correct.

The correct answer is: 25 cubic feet $0.71\mathrm{m}^3$ $0.71m3$

Question text

What percentage of the air is oxygen?

Select one:
a. 40%
b. 60%
c. 20%
d. 80%

Feedback

Your answer is incorrect.

The correct answer is: 20%

Question text

A volume of natural gas is burned to create 2,000,000 Btuh of heat. The volume of Carbon dioxide produced would be:

Select one:
a. 2,000 cu.ft.
b.20,000 cu.ft.
c. 10,000 cu.ft
d. 4,000 cu.ft.

Feedback

Your answer is incorrect.

$\frac{2{,}000{,}000\mathrm{Btuh}}{1{,}000\frac{\mathrm{Btu}}{\mathrm{Ft.}}}=2{,}000\mathrm{CFH}(\mathrm{CH}_4)$ $2{,}000{,}000Btuh1{,}000BtuFt.=2{,}000CFH(CH4)$
$2{,}000\times1=2{,}000\mathrm{CFH}(\mathrm{CO}_2)$ $2{,}000\times1=2{,}000CFH(CO2)$

The correct answer is: 2,000 cu.ft.

Question text

"The rapid combination of fuel with oxygen resulting in a release of heat" would be a good definition of:

Select one:
a. flash point
b. relative heat value

c. combustion
d. calorific value

Feedback

Your answer is correct.

The correct answer is: combustion

Question text

When you burn a hydrocarbon fuel, the products of complete combustion contain:

Select one:
a. $CO_2+N_2+H_2O$ $CO2+N2+H2O$
b. $CO+CO_2+H_2O$ $CO+CO2+H2O$
c. CO_2+CO+N_2 $CO2+CO+N2$
d. $CO+N_2+H_2O$ $CO+N2+H2O$

Feedback

Your answer is correct.

The correct answer is: $CO_2+N_2+H_2O$ $CO2+N2+H2O$

Question text

The ratio of oxygen (O) to nitrogen (N) in air is approximately:

Select one:
a. 5 : 1
b. 4 : 1
c. 1 : 4
d. 10 : 1

Feedback

Your answer is correct.

The correct answer is: 1 : 4

Identify the two different terms associated with air that make up perfect or stoichiometric combustion?

Select one:

A primary air and combustion air
b dilution air and tertiary air
c primary air and excess air
d. primary air and secondary air

Feedback

Your answer is incorrect.

The correct answer is: primary air and secondary air

Question text

Secondary air is added to the burner at the:

Select one:
a. burner ports
b. air shutter
c. draft hood
d. orifice

Feedback

Your answer is correct.

The correct answer is: burner ports

Question text

Air that is premixed with the gas as it enters the burner is called:

Select one:
a. excess air
b. primary air
c. dilution air
d. secondary air

Feedback

Your answer is incorrect.

The correct answer is: primary air

Question text

The three necessary things for combustion to take place are:

Select one:
a. fuel, oxygen, and heat
b. heat, air, and nitrogen
c. fuel, nitrogen, and heat
d. oxygen, heat, and air

Feedback

Your answer is correct.

The correct answer is: fuel, oxygen, and heat

Question text

LP gases have higher heating values than natural gas, therefore, require:

Select one:
a. less combustion air
b. more combustion air
c. no combustion air
d. the same amount of combustion air

Feedback

Your answer is incorrect.

The correct answer is: more combustion air

Question text

The additional air supplied to ensure complete combustion is called:

Select one:
a. excess air
b. secondary air
c. combustion air
d. primary air

Feedback

Your answer is correct.

The correct answer is: excess air

Question text

An appliance with an atmospheric burner has an input of 950,000 Btuh. The appliance is designed to burn natural gas (C.V. 1,000 $\mathrm{Btu/ft.}^3$$Btu/ft.3$). How much excess air per hour will this appliance require?

Select one:
a. $475\mathrm{Ft.}^3$$475Ft.3$
b. $4{,}750\mathrm{Ft.}^3$$4{,}750Ft.3$
c. $5{,}700\mathrm{Ft.}^3$$5{,}700Ft.3$
d. $11{,}400\mathrm{Ft.}^3$$11{,}400Ft.3$

Feedback

Your answer is correct.

$\frac{950{,}000\mathrm{Btuh}}{1{,}000\frac{\mathrm{Btu}}{\mathrm{ft.}^3}}=950\mathrm{CFH}(\mathrm{CH}_4)$$950{,}000Btuh1{,}000Btuft.3=950CFH(CH4)$
$950\mathrm{CFH}\times5=4{,}750\mathrm{CFH}$$950CFH\times5=4{,}750CFH$

The correct answer is: $4{,}750\mathrm{Ft.}^3$$4{,}750Ft.3$

Question text

Calculate the products of combustion as well as the air requirements for the following questions

150,000 Btuh Natural Gas with draft hood:

Products of Combustion

Feedback

Your answer is partially correct.

You have correctly selected 7.

$\frac{150,000 \text{Btuh}}{1,000 \frac{\text{Btu}}{\text{ft.}^3}} = 150 \text{CFH} (CH_4)$

The correct answer is:
Calculate the products of combustion as well as the air requirements for the following questions

150,000 Btuh Natural Gas with draft hood:

Products of Combustion

CO_2 = [150 CFH]
H_2O = [300 CFH]
N_2 = [1,200 CFH]
Air Requirements

Combustion Air = [1,500 CFH]

Primary Air = [500 CFH]

Secondary Air = [1,000 CFH]

Excess Air = [750 CFH]

Dilution Air = [2,250 CFH]

Total Air = [4,500 CFH]

Question text

Calculate the products of combustion as well as the air requirements for the following questions

26 kW Natural Gas with draft hood:

Products of Combustion

Feedback

Your answer is correct.

$\frac{26 \text{kW}}{0.293 \frac{\text{kW}}{\text{ft.}^3}} = 88.737 \text{CFH}$

The correct answer is:
Calculate the products of combustion as well as the air requirements for the following questions

26 kW Natural Gas with draft hood:

Products of Combustion

CO_2 = [88.74 CFH]
H_2O = [177.47 CFH]
N_2 = [709.9 CFH]

Air Requirements

Combustion Air = [887.37 CFH]

Primary Air = [295.79 CFH]

Secondary Air = [591.58 CFH]

Excess Air = [443.69 CFH]

Dilution Air = [1,331.06 CFH]

Total Air = [2,662.11 CFH]

Question text

Calculate the products of combustion as well as the air requirements for the following questions

725,000 Btuh Natural Gas with barometric damper:

Products of Combustion

Air Requirements

Feedback

Your answer is correct.

$725{,}000\mathrm{Btuh}1{,}000\mathrm{Btuft.3}=725\mathrm{CFH}725{,}000Btuh1{,}000Btuft.3=725CFH$

The correct answer is:
Calculate the products of combustion as well as the air requirements for the following questions

725,000 Btuh Natural Gas with barometric damper:

Products of Combustion

$\mathrm{CO_2}CO2$ = [725 CFH]
$\mathrm{H_2O}H2O$ = [1,450 CFH]
$\mathrm{N_2}N2$ = [5,800 CFH]

Air Requirements

Combustion Air = [7,250 CFH Primary Air = [2,416.67 CFH]

Secondary Air = [4,833.33 CFH]

Excess Air = [3,625 CFH]

Dilution Air = [10,875 CFH]

Total Air = [21,750 CFH]

Question text

Calculate the products of combustion as well as the air requirements for the following questions

400,000 Btuh Propane fan-assist appliance:

Products of Combustion

Feedback

Your answer is incorrect.

$\mathrm{400{,}000Btuh2{,}500Btuft.3}=\mathrm{160CFH}400{,}000Btuh2{,}500Btuft.3=160CFH$

The correct answer is:
Calculate the products of combustion as well as the air requirements for the following questions

400,000 Btuh Propane fan-assist appliance:

Products of Combustion

$\mathrm{CO_2}CO2$ = [480 CFH]
$\mathrm{H_2O}H2O$ = [640 CFH]
$\mathrm{N_2}N2$ = [3,200 CFH]
Air Requirements

Combustion Air = [4,000 CFH]

Primary Air = [1,333.33 CFH]

Secondary Air = [2,666.67 CFH]

Excess Air = [2,000 CFH]

Dilution Air = [0]

Total Air = [6,000 CFH]

Calculate the products of combustion as well as the air requirements for the following questions

28 kW Propane with barometric damper:

Products of Combustion

Feedback

Your answer is incorrect.

$28\mathrm{kW}0.733_{\mathrm{kWft.3}}=38.2\mathrm{CFH}28kW0.733kWft.3=38.2CFH$

The correct answer is:
Calculate the products of combustion as well as the air requirements for the following questions

28 kW Propane with barometric damper:

Products of Combustion

$\mathrm{CO_2}CO2$ = [114.6 CFH]
$\mathrm{H_2O}H2O$ = [152.8 CFH]
$\mathrm{N_2}N2$ = [764 CFH]

Air Requirements

Combustion Air = [955 CFH]

Primary Air = [318.33 CFH]

Secondary Air = [636.67 CFH]

Excess Air = [477.5 CFH]

Dilution Air = [1,433.75 CFH]

Total Air = [2,865 CFH]

Calculate the products of combustion as well as the air requirements for the following questions

250,000 Btuh Propane with draft hood:

Products of Combustion

Feedback

Your answer is incorrect.

$\frac{250,000 Btuh}{2,500 \frac{Btu}{ft.^3}} = 100 CFH$

The correct answer is:
Calculate the products of combustion as well as the air requirements for the following questions

250,000 Btuh Propane with draft hood:

Products of Combustion

CO_2 = [300 CFH]
H_2O = [400 CFH]
N_2 = [2,000 CFH]
Air Requirements

Combustion Air = [2,500 CFH]

Primary Air = [833.33 CFH]

Secondary Air = [1,666.67 CFH]

Excess Air = [1,250 CFH]

Dilution Air = [3,750 CFH]

Total Air = [7,500 CFH]

Flues gases

The "ultimate" CO_2 percent obtainable with combustion of natural gas is closest to:

Select one:
a. 20 %
b. 50 %
c. 4 %
d. 12 %

Feedback

Your answer is incorrect.

The correct answer is: 12 %

Question text

Providing there is excess air, as the percentage of CO_2 in the products of combustion decreases, the combustion efficiency: Select one:

a. remains constant
b. is unaffected
c. decreases

d. increases

Feedback

Your answer is incorrect.

The correct answer is: decreases

Question text

If a combustion analysis indicated an unacceptable level of carbon monoxide in the products of combustion, a gas fitter should:

Select one:
a. turn appliance regulator adjusting screw clockwise and decrease primary air
b. decrease secondary air and increase input
c. install a power venter
d. check air supply and clock appliance

Feedback

Your answer is incorrect.

The correct answer is: check air supply and clock appliance

Question text

If an appliance with an atmospheric burner is found to have a 7.5 % $\mathrm{CO_2}CO2$ level and the input is correct, the gas fitter should:

Select one:
a. increase input
b. install different burners from a higher efficiency appliance
c. do nothing more - 7.5 % is acceptable
d. tape over some of the air openings on the appliance (to reduce excess air)

Feedback

Your answer is correct.

The correct answer is: do nothing more - 7.5 % is acceptable

Question text

A product of incomplete combustion which is colourless, ordourless, tasteless and extremely toxic is:Select one:

a. aldehydes
b. Nitrogen
c. carbon dioxide
d. carbon monoxide

Feedback

Your answer is correct.

The correct answer is: carbon monoxide

Question text

During the combustion of natural gas the combustion products in the vent are cooled down below 120 °F. Which of the following conditions will occur ?

Select one:
a. The flue products will condense and corrode the vent
b. the carbon in the flue gas will condense and plug the vent with soot
c. the quantity of carbon dioxide will increase
d. The quantity of CO will increase

Feedback

Your answer is incorrect.

The correct answer is: The flue products will condense and corrode the vent

Question text

The chemical that may be detected by our sense of taste and/or odour and is also a product of incomplete combustion is:

Select one:
a. aldehyde
b. alkali
c. carbon monoxide
d. carbon dioxide

Feedback

Your answer is correct.

The correct answer is: aldehyde

Mechanical Burners

Complete the description of a fan-assisted burner.

A burner in which the combustion air is supplied by mechanical pressure at sufficient pressure to overcome the resistance of the burner.

Question text

What type of draft control is used with a fan-assisted burner ?

Select one:
a. Thermal damper
b. Barometric damper
c. Electrical damper

d. Top-mount damper

Feedback

Your answer is correct.

The correct answer is: Barometric damper

Question text

Where are the fan(s) located on an induced draft burner?

Select one:
a. Upstream and Downstream of the combustion chamber
b. Downstream of the combustion chamber
c. There is no fan
d. Upstream of the combustion chamber

Feedback

Your answer is incorrect.

The correct answer is: Downstream of the combustion chamber

Question text

Match the type of burner with the appropriate combustion chamber pressure.

Fan-assisted burner: negative combustion chamber pressure positive combustion chamber

negative combustion chamber pressure

Forced draft burner: negative combustion chamber pressure positive combustion chamber

postive combustion chamber press

Feedback

Question text

Where are the fan(s) located on a balanced draft burner system?

Select one:
a. Downstream of the combustion chamber
b. Upstream of the combustion chamber
c. There is no fan
d. Upstream and downstream of the combustion chamber

Feedback

Your answer is correct.

The correct answer is: Upstream and downstream of the combustion chamber

Question text

Is the combustion chamber pressure in a forced draft burner system positive or negative?

Select one:
a. positive
b. negative
c. neutral

Feedback

Your answer is correct.

The correct answer is: positive

Question text

Which fuels are typically used with a dual fuel burner ?

Select one:
a. Diesel and Butane
b. Butane and Natural Gas
c. Propane and Natural Gas
d. Natural Gas and Oil

Feedback

Your answer is correct.

The correct answer is: Natural Gas and Oil

Question text

Select all the types of premix burners.

Select one or more:
a. Mechanical mixer
b. Aspirator
c. Primary induction
d. Inspirator
e. Atmospheric

Feedback

Your answer is correct.

The correct answers are: Inspirator, Aspirator, Mechanical mixer

Question text

Using the following statements match the one that best describes the premix burner type.

Inspirator - uses gas under pressure to entrain airuses air under pressure to entrain gas

Aspirator - uses gas under pressure to entrain airuses air under pressure to entrain gas

Feedback

Your answer is incorrect.

The correct answer is:
Using the following statements match the one that best describes the premix burner type.

Inspirator - [uses gas under pressure to entrain air]

Aspirator - [uses air under pressure to entrain gas]

Which type of premix burner typically uses a zero governor to control gas pressure?

Select one:
a. Inspirator
b. Mechanical mixer
c. Aspirator

Feedback

Your answer is correct.

The correct answer is: Aspirator

Question text

Match the descriptions below to the appropriate type of mixer.

Port mix burnerNozzle mix burnerPrimary burnersPremix burners - mix the gas and the air before the burner head

Port mix burnerNozzle mix burnerPrimary burnersPremix burners - mix the gas and the air in the burner port

Feedback

Your answer is incorrect.

The correct answer is:
Match the descriptions below to the appropriate type of mixer.

[Premix burners] - mix the gas and the air before the burner head

[Nozzle mix burner] - mix the gas and the air in the burner port

Question text

What is the most common way to control the proportions of gas and air entering a nozzle mix burner?

Select one:
a. Self adjusting orifice
b. Electric orifice

c. Locking choke adjustment
d. Mechanical linkage

Feedback

Your answer is incorrect.

The correct answer is: Mechanical linkage

Question text

What is another name for a Bunsen burner ?

Select one:
a. One port burner
b. Mechanical burner
c. Direct output burner (DOB)
d. Atmospheric burner

Feedback

Your answer is correct.

The correct answer is: Atmospheric burner

Question text

Bunsen burners and inspiriting burner both use gas flow to draw in air. Which type of burner would operate at a higher pressure (assuming the fuel used was the same)?

Select one:
a. Bunsen burners
b. Inspiriting burners

Feedback

Your answer is correct.

The correct answer is: Inspiriting burners

Question text

What are other names for an aspirating mixer ?

Select one or more:
a. Air-jet mixer
b. Proportional mixer
c. Port head mixer
d. Gas-jet mixer

Feedback

Your answer is partially correct.

You have correctly selected 1.
The correct answers are: Air-jet mixer, Proportional mixer

Question text

Where is the gas introduced into a mechanical premix burner?

Select one:
a. At the burner head
b. Upstream of the fan or blower
c. At the inlet of the fan or blower.
d. Primary venturi leading to the burner head

Feedback

Your answer is incorrect.

The correct answer is: At the inlet of the fan or blower.

Question text

What is the greatest concern with mechanical premix burners?

Select one:
a. Flashback
b.Yellow-tipping
c. Carbonizing flame
d. Flame liftoff

Feedback

Your answer is incorrect.

The correct answer is: Flashback

Question text

At what percentage of natural gas to air will a flame be at its highest temperature?

Select one:
a. 25 %
b. 20 %
c. 10 %
d. 15 %

Feedback

Your answer is incorrect.

The correct answer is: 10 %

Question text

Why are nozzle mix burners preferred over premix burners? Select all that apply.

Select one or more:
a. Less flashback
b. Lower cost
c. Higher flow rate
d. Easier to install
e. More fuel efficient

f. Wide turndown ratio

Feedback

Your answer is partially correct.

You have correctly selected 1.
The correct answers are: Wide turndown ratio, Less flashback, Higher flow rate

Question text

What methods are being used to lower NOx emissions from gas burners?

Select one or more:
a. Flue gas recirculation
b. Staged air and fuel burners
c. Catalytic generators
d. Infrared burners
e. Fuel compression systems
f. Cold air intake systems
g. Electrical ignition systems

Feedback

Your answer is partially correct.

You have correctly selected 2.
The correct answers are: Staged air and fuel burners, Flue gas recirculation, Infrared burners, Catalytic generators

Astrompehre burneers

A device used to burn gas under control to produce useful heat is called a [burner]

Select the two **general** types of gas burners from the following options.

The correct answers are: Atmospheric, Mechanical

In a Bunsen type burner a/an [orifice] is used to regulate the flow of gas to the burner.

Air which is drawn into the burner by the flow of a jet of low pressure gas through an orifice is referred to asv answer ;

he correct answer is: primary air

Air supplied from around the flame is referred to as [secondary] air.

The amount of primary air to a gas burner is regulated by the [Air shutter]

Combustion at a gas burner takes place at the [Ports]

The mixing tube of a burner is commonly known as the [Venturi].

One of the factors which affects the maximum flow rate through an orifice is the [Size of the orifice]

gas pressure at the manifold of an appliance can be measured with a/an [Manometer]

When the velocity of the gas/air mixture exceeds the flame velocity, the flame will [Lift] away from the burner ports.

When the primary air supply is insufficient, [Yellow-tipped] flames will be observed.

When the velocity of the gas/air mixture flowing through the burner ports is reduced below the flame velocity, the flame will [Flashback] through the port.

Flashback on burners can sometimes be eliminated by reducing the [Primary] air.

Insufficient [Secondary] air supplied to a burner enclosed in a combustion chamber will cause the flame to float.

Secondary air flow is controlled by the size of the [Air Inlet] openings into the combustion chamber and the [Flue] outlet size.

A bed burner is when a number of atmospheric burners are combined to form a single unit.

Select one:
True
False

Feedback
The correct answer is 'True'.

Select all causes for a flame to burn back into the burner head (flashback).

The correct answers are: Low gas pressure, Too small of an orifice, Too much primary air

Select all causes for flame lift off.

The correct answers are: High gas pressure, Too large of an orifice, Too much primary air

The most common cause of yellow flames is an excess amount of primary air.

Select one:
True
False

Feedback
The most common cause of yellow flames is lack of primary air.

The correct answer is 'False'.

An atmospheric burner at sea level uses air supplied at Answer psia

Please answer to one decimal places. e.g. 10.1answer 14.7

A “pilot” is a flame that is used to ignite a gas/air mixture at the main burner(s). answer true

What may be installed or modified to reduce the effect of a strong draft against the pilot

The correct answer is: Pilot shield

The purpose of a Pilot Turndown Test is to ensure that the pilot is installed in the correct location to safely light the main burner. Answer true

Your answer is incorrect.

The correct answer is: Burner Head → 4, Secondary Air → 2, Orifice → 6, Primary Air → 1, Mixing Tube/Venturi → 5, Burner Port → 3

This is a Upshot Uni-port Atmospheric Burner. Answer false

When the gas/air velocity exceeds the flame speed; gas pressure is too high, too large of an orifice or too much primary would be the cause of...

Select one:
a.Increased heat
b.Flashback
c.Flame lift off
d.Yellow tipping

The correct answer is: Flashback

When the gas/air velocity is less than the flame speed; low gas pressure, too small of an orifice or too much primary air creating a lean mixture would cause...

Select one:
a.Increased heat
b. Flashback
c. Yellow tipping
d. Flame lift off

Feedback

Your answer is incorrect.

The correct answer is: Flame lift off

How many Btu’s per square inch of burner port should be allocated to an atmospheric burner and what is the term used to describe it?

Select one:
a. 20 MBH – 30 MBH/in.^{2}, Burner Loading

b. 25 MBH – 30 MBH/in.^{2}, Burner Loading
c. 20 MBH – 30 MBH/in.^{2}, Port Loading
d. 25 MBH – 30 MBH/in.^{2}, Port Loading

Feedback

Your answer is incorrect.

The correct answer is: 25 MBH – 30 MBH/in.^{2}, Port Loading

Question text

How many BTUH should be allocated for a burner with 40 ports 1/8 of an inch in diameter (minimum and maximum BTUH)?

Select one:
a. 25 000 Btuh, 30 000 Btuh
b. 12 272 Btuh, 14 726 Btuh
c. 787 854 Btuh, 945 425 Btuh
d. 98 175 Btuh, 117 810 Btuh

Feedback

Your answer is incorrect.

40×(128×0.7854)×25,000Btuin.2)=12,272Btuh40×(128×0.7854)×25,000Btuin.2)=12,272Btuh
40×(128×0.7854)×30,000Btuin.2)=14,726Btuh40×(128×0.7854)×30,000Btuin.2)=14,726Btuh

The correct answer is: 12 272 Btuh, 14 726 Btuh

Question text

Which of the following would most likely produce the greatest amount of carbon monoxide?

Select one:

aYellow tipping

b.Flame rollout
c.Waving flames
d.Flame liftoff

Feedback

Your answer is incorrect.

The correct answer is: Flame liftoff

Question text

“Barber” burners use the __________________________ principle.

Select one:
A atmospheric inshot
b.flame retention
c.flame impingement
d. ribbon port

Feedback

Your answer is incorrect.

The correct answer is: flame retention

Question text

Flame lift-off can be corrected by:

Select one:

a. turning the regulator adjusting screw clockwise
b adding more secondary air
b. increasing pipe size to appliance
c. decreasing primary air

Feedback

Your answer is incorrect.

The correct answer is: decreasing primary air

Question text

The low-pressure area in the venturi of an atmospheric burner is created by:

Select one:
a. the opening in the air shutter which allows primary air to enter
b. the low velocity gas flow through the orifice
c. the high velocity gas flow through the orifice
d. the low gas pressure in the manifold

Feedback

Your answer is incorrect.

The correct answer is: the high velocity gas flow through the orifice

Question text

Primary air would be defined as that air:

Select one:
A .premixed with the gas by the supplier
b. heated and circulated by the appliance
c. surrounding the gas flame
d. drawn in at the burner inlet

Feedback

Your answer is incorrect.

The correct answer is: drawn in at the burner inlet

Question text

Which of the following conditions would cause floating flames?

Select one:

a. A blocked vent cap
b. Too much primary air
c. Low gas pressure
d A blocked flue outlet

Feedback

Your answer is incorrect.

The correct answer is: A blocked flue outlet

Question text

How would you adjust the primary air on a barber tip burner?

Select one:
a. Turn the spoiler screw in or out
b. Turn the modified wing on the shutter
c. Install a larger orifice
d. The primary air opening is fixed, no adjustment possible

Feedback

Your answer is incorrect.

The correct answer is: The primary air opening is fixed, no adjustment possible

Question text

“A pilot that burns at low turndown throughout the entire time the burner is in service, whether or not the main burner is firing, except that upon a call for heat, the fuel flow to the pilot is automatically increased to produce a flame which will reliably ignite the main burner fuel”, is a good definition of a/an:

Select one:
a. intermittent pilot
b. interrupted pilot
c. expanding pilot
d. continuous pilot

Feedback

Your answer is incorrect.

The correct answer is: expanding pilot

Question text

A noisy, lifting, blowing pilot flame is usually caused by:

Select one:
a. high gas pressure
b. a partially blocked pilot orifice
c. too large of a pilot orifice
d. a lack of secondary air

Feedback

Your answer is incorrect.

The correct answer is: high gas pressure

Air Requirements for Gas Fired Equipment

Question text

A forced warm air furnace equipped with an atmospheric burner, is found to have an above normal quantity of carbon monoxide in the flue products. Clocking the furnace indicates the input is incorrect. This first step to correct this problem would be to :

Select one:
a. adjust the primary air shutters
b. increase the air supply to the burner
c. increase the air supply to the furnace room
d. correct the input to the burner

Feedback

Your answer is incorrect.

The correct answer is: correct the input to the burner

Which of the following items will determine the firing rate of an atmospheric burner?

Select one:
a. The orifice size and the pressure
b. The orifice size and the pipe size
c. The orifice size and the primary air
d. The pressure and the correct amount of air

Feedback

Your answer is incorrect.

The correct answer is: The orifice size and the pressure

Question text

If flashback is occurring in an atmospheric burner, which of the following actions may be required?

Select one:
a. Decrease the primary air and/or increase the gas pressure

b. Increase the primary air and/or decrease the gas pressure
c. Clean the burner and decrease the gas pressure
d. Clean the burner and increase the primary air

Feedback

Your answer is incorrect.

The correct answer is: Decrease the primary air and/or increase the gas pressure

Question text

A flame that is waving or rolling out when the air circulation fan on a furnace comes on may indicate:

Select one:
a. an over-pressurized manifold
b. too much primary air
c. a cracked heat exchanger
d. partially blocked flue outlet

Feedback

Your answer is incorrect.

The correct answer is: a cracked heat exchanger

Question text

The percentage of natural gas in a gas/air mixture required at the burner to obtain maximum efficiency is approximately:

Select one:
a. 100 %
b. 4 %
c. 10 %
d. 14 %

Feedback

Your answer is incorrect.

The correct answer is: 10 %

Determine the minimum free area required for a rectangular air supply duct serving a single family residence complying with code clause 8.2.1, if it has a boiler rated at 130,000 Btuh and a hot water storage tank rated at 60,000 Btuh? The boiler is equipped with a barometric damper and the hot water tank is equipped with a draft hood.

Select one:
a. 13-inch2
b. 47-inch2
c. 39-inch2

d. 29-inch2

Feedback

Your answer is correct.

Low volume, air-tight, both appliances have draft control - Tale 8.1

Total input: 190 MBH = 29"^{2}

The correct answer is: 29-inch2

Question text

Calculate the size of a round air supply duct serving an installation containing a total of 50 kW of appliances without draft control devices and 50 kW of atmospherically-fired units equipped with draft hoods. The structure complies with code clause 8.2.1 and the duct length is 3.5 meters.

Select one:
a. 25 mm
b. 75 mm
c. 225 mm
d. 150 mm

Feedback

Your answer is correct.

Low volume, air-tight, appliances with draft control and without draft control – Tables 8.1 and 8.2

Table 8.1 Appliances with draft control 50 kW = 150 mm

Table 8.2 All appliances 100 kW = 150 mm

The correct answer is: 150 mm

Question text

A structure conforms to clause 8.2.1. It contains a boiler rated at 120 MBH and a hot water tank rated at 35 MBH. Both appliances are designed for use with no draft control devices and the air supply is brought from outdoors through a duct. Determine the following:

a. Air supply duct area – 13151814141211 in.^{2}

b. Round duct size – 122964 in.

Feedback

Your answer is correct.

Low volume, air-tight, appliances do not have draft control – Table 8.2

Total input: 155 MBH = 13 in.^{2} or 4 in. diameter

The correct answer is:
A structure conforms to clause 8.2.1. It contains a boiler rated at 120 MBH and a hot water tank rated at 35 MBH. Both appliances are designed for use with no draft control devices and the air supply is brought from outdoors through a duct. Determine the following:

a. Air supply duct area – [13] in.^{2}

b. Round duct size – [4] in.

Question text

A structure does not comply with clause 8.2.1. It is equipped with a boiler rated at 150,000 Btuh and a hot water tank rated at 60,000 Btuh. Both appliances have draft control devices.

The volume of the structure is 10,000 Ft.3 Determine the following:

a. Air supply duct area – 4618282432 in.^{2}

b. Round duct size – 34562 in.

Feedback

Your answer is correct.

Low volume, not air-tight, appliances have draft control devices – Table 8.3

Total input: 210 MBH = 32 in.^{2} refer to Table 8.1 for the acceptable round duct size of 6 in. diameter.

The correct answer is:
A structure does not comply with clause 8.2.1. It is equipped with a boiler rated at 150,000 Btuh and a hot water tank rated at 60,000 Btuh. Both appliances have draft control devices. The volume of the structure is 10,000 Ft.3 Determine the following:

a. Air supply duct area – [32] in.^{2}

b. Round duct size – [6] in.

Question text

A structure does not conform to clause 8.2.1(a) or (b). It is equipped with a boiler rated at 215,000 Btuh and a hot water tank rated at 40,000 Btuh. Neither appliance has a draft control device and the volume of the structure is 10,000 Ft.3 Determine the following:

a. Air supply duct area – 972165124021 in.^{2}

b. Round duct size – 972165124021 in.

Feedback

Your answer is correct.

Low volume, not air-tight, appliances do not have draft control – Table 8.4

Total input: 255 MBH = 0 in.^{2}

The correct answer is:
A structure does not conform to clause 8.2.1(a) or (b). It is equipped with a boiler rated at 215,000 Btuh and a hot water tank rated at 40,000 Btuh. Neither appliance has a draft control device and the volume of the structure is 10,000 Ft.3 Determine the following:

a. Air supply duct area – [0] in.^{2}

b. Round duct size – [0] in.

Question text

A mechanical room is located within a structure that does not comply with code clause 8.2.1. The boiler is rated at 220,000 Btuh and the hot water tank is rated at 50,000 Btuh. Both units are equipped with draft hoods. The volume of the structure is 20,000 Ft.3 What would be the free area of the opening(s) required for the enclosure? Where should the openings be located?

Free Area: 220260165190325270 in.^{2}

Openings location: 2-106-184-12 in. above the floor.

Feedback

Your answer is correct.

Low volume, enclosure within a structure, code clause 8.2.6

Total input: 270 MBH = 270 in.^{2}

Air supply opening: 6 – 18 in. above the floor

Ventilation opening: as high as practicable, but in no case lower than the relief opening of the lowest draft control.

The correct answer is:
A mechanical room is located within a structure that does not comply with code clause 8.2.1. The boiler is rated at 220,000 Btuh and the hot water tank is rated at 50,000 Btuh. Both units are equipped with draft hoods. The volume of the structure is 20,000 Ft.3 What would

be the free area of the opening(s) required for the enclosure? Where should the openings be located?

Free Area: [270] in.^{2}

Openings location: [6-18] in. above the floor.

Question text

A structure conforms to clause 8.2.1. It has a mid-efficient furnace rated at 90 MBH and a hot water tank rated at 40 MBH. The furnace does not have a draft control device but the hot water tank has a draft hood. Determine the following:

The free area of the air supply duct Answer

Feedback

Low volume, air-tight, appliances with draft control and without draft control – Tables 8.1 and 8.2

Table 8.1

Appliances with draft control

Total input: 40 MBH = 7 in.2 or 3 in. diameter

Table 8.2

All appliances

Total input: 130 MBH = 11 in.2 or 4 in. diameter

Minimum 24 in. above the outside grade level (8.3.6 variations to the national code)

Within 1 ft. (300 mm) above and 2 ft. (600 mm) horizontally from the burner level of the furnace (largest input appliance)

Question text

How would you satisfy the air requirements for a 40,000 Btuh storage type hot water tank, equipped with a draft hood that is located in a closet of a single family dwelling, if the dwelling conforms to clause 8.2.1? There are no other gas-fired appliances in the enclosure.

Total input = Air supply opening = sq.in

Ventilation opening = Answer sq.in

Feedback

Code clause 8.2.3 refers to code clause 8.2.6

Total input: 40 MBH = 40 in.2 for the air supply opening, since the appliance has a draft control device; 40 in.2 ventilation opening.

High air required

Calculate the air supply and ventilation free area for an industrial installation containing the following appliances:

- 1 boiler - 500 MBH
- 1 boiler - 1,500 MBH
- 2 incinerators - 750 MBH Each
- 5 hot water tanks - 50 MBH Each

All of the appliances are equipped with draft control devices.

Total input of the appliances=3,750,000 Btuh

8.4.2

1,000,000 Btuh÷7,000BTU/ in2$in2$=142.857 in2$in2$
2,750,000 Btuh÷14,000 BTU/ in2$in2$ =196.429 in2$in2$
Air supply free area=339.286 in2$in2$
8.4.1

339.286 in.2$in.2$ ×10%=33.929 in.2$in.2$
Ventilation opening free area=33.929 in2

Calculate the air supply and ventilation free area for an institutional building that contains the following appliances:

- 1 hot water boiler with an input of 500 MBH with barometric damper
- 1 steam boiler with an input of 610 MBH without draft control
- 1 pool boiler with an input of 300 MBH with a draft hood
- 1 commercial hot water tank with an input of 75 MBH with a draft hood
- 1 duct heater with an input of 100 MBH without draft control
- Appliances with draft control=875 MBH
- Appliances without draft control=710 MBH
- 8.4.4
- 875,000 Btuh ÷ 7,000 BTU/in2$in2$ = 125 in2$in2$
- 710,000 Btuh ÷ BTU/in2$in2$ = 23.667 in2$in2$
- Total air supply free area=148.667 in2$in2$
- 8.4.1
- 148.667 in2$in2$ × 10% = 14.867 in2$in2$
- Ventilation free area = 14.867 in2

A commercial installation has a mechanical room that contains the following atmospherically-fired appliances with draft control:

- A hot air furnace with an input of 250,000 Btuh
- A hot water boiler with an input of 350,000 Btuh
- A hot water tank with an input of 90,000 Btuh

The air supply and ventilation will enter the mechanical room through holes in the outside wall. Calculate the free area of the air supply and ventilation and enter the required values.:

Total input of all appliances = 690 MBH

8.4.2

$690{,}000\text{Btuh}\div 7{,}000\frac{\text{Btu}}{\text{in.}^2}=98.571\text{in.}^2$$690{,}000Btuh\div 7{,}000\frac{Btu}{in.^2}=98.571in.^2$
$\text{Total air supply free area}=98.571\text{in.}^2$$Total\ air\ supply\ free\ area=98.571in.^2$
8.4.1

$98.571\text{in.}^2\times 10$$98.571in.^2\times 10$ % $=9.857\text{in.}^2<10\text{in.}^2$$=9.857in.^2<10in.^2$
minimum allowable ventilation free area is $10\text{in.}^2$$10in.^2$ so that is the answer.
Air supply location = 6-18 inches above floor

Ventilation air location = as high as practicle

A structure is equipped with a boiler that has a rated input of 1,500 kW and is equipped with a barometric draft control. Determine the free area of the ventilation air opening:

8.4.2

300 kW x 310 $\text{mm}^2$$mm^2$/kW = 93,000 $\text{mm}^2$$mm^2$
1,200 kW x 155 $\text{mm}^2$$mm^2$/kW = 186,000 $\text{mm}^2$$mm^2$
Total air supply free area = 279,000 $\text{mm}^2$$mm^2$
8.4.1

279,000 $\text{mm}^2$$mm^2$ x 10% = 27,900 $\text{mm}^2$$mm^2$
Ventilation free area = 27,900 mm^2
Calculate the free area in square inches for the air supply and ventilation of a mechanical room that contains the following appliances:

- One boiler without draft control rated at 200 kW
- One boiler with draft control rated at 3,000 MBH
- One duct heater without draft control rated at 75 kW
- One hot water tank with a draft hood rated at 300,000 Btuh

8.4.4

Total input of appliances with draft control=3,300 MBH

Total input of appliances without draft control=275 kW

275 kW ÷ 0.000293 kW/BTU = 938,567 Btuh

8.4.2

1,000,000 Btuh ÷ 7000 BTU/in2*in*2 = 142.857 in2*in*2
2,300,000 Btuh ÷ 14,000 BTU/in2*in*2 = 164.286 in2*in*2
8.4.3

938,567 Btuh ÷ 30,000 BTU/in2*in*2 = 31.286 in2*in*2
Total air supply free area = 338.429 in2*in*2
8.4.1

338.429 in2*in*2 × 10% = 33.843 in2*in*2
Ventilation free area = 33.843 in2
Dampers and grills

A boiler room contains the following gas-fired appliances:

- 1 - 4,800,000 Btuh boiler (double acting barometric damper)
- 2 - 300,000 Btuh hot water tanks (draft hoods)
- 1 - 30,000 Btuh incinerator (single acting barometric damper)

The air supply and ventilation air openings on the outside of the building are covered by grilles that consist of metal louvers with wire mesh that have a free air allowance of 45%. If rectangular ducts are to be used for both the combustion and ventilation air, calculate the following: A) Air supply duct free area = Answe

B) Air Supply grille area = AnswerC) Ventilation duct free area = Answer

D) Ventilation grille area =

A) Total input of appliances = 5,430 MBH

8.4.2

1,000,000Btuh÷7,000Btuin.2=142.857in.21,000,000*Btuh*÷7,000*Btuin*.2=142.857*in*.2
4,430,000Btuh÷14,000Btuin.2=316.429in.24,430,000*Btuh*÷14,000*Btuin*.2=316.429*in*.2
Total air supply free area =459.286in.2*Total air supply free area* =459.286*in*.2
B) Answer from A) = 459.286 in.2*in*.2
459.286in.2÷45459.286*in*.2÷45 % =1,020.635in.2=1,020.635*in*.2
C) Answer from previous section = 459.286 in.2*in*.2
8.4.1

459.286in.2×10459.286*in*.2×10 % =45.929in.2=45.929*in*.2
Ventilation free area = 45.929 in.2*in*.2
D) Answer from C) = 45.929 in.2*in*.2
45.929in.2÷4545.929*in*.2÷45 % =102.064in.2
A building has a mechanical room with a combined input of 650 MBH. The air supply and ventilation ducts are 45 feet long and supply air from outdoors to the mechanical room.

Both grilles have a 40% free air allowance and all the appliances have draft control devices. Calculate the size of the:

A) Air supply duct free area =

B) Air supply grille area = Answer

C) Ventilation duct free area = Answer

A) 8.4.2

650,000Btuh÷7,000Btuin.2=92.857in.2650,000Btuh÷7,000Btuin.2=92.857in.2
Total air supply free area =92.857in.2Total air supply free area =92.857in.2
B) Answer from A) = 92.857 in.2in.2
92.857in.2÷4092.857in.2÷40 % =232.143in.2=232.143in.2
C) Number found in previous section = 92.857 in.2in.2
8.4.1

92.857in.2×1092.857in.2×10 % =9.2857in.2<10in.2=9.2857in.2<10in.2
Minimum allowable ventilation free area = 10in.210in.2
D) Answer from C) = 10in.2in.2
10in.2÷4010in.2÷40 % =25in.2
D) Ventilation grille area
A mechanical room contains a steam boiler without draft control with a rated input of 1,800,000 Btuh (527.22 kW), and a boiler with a barometric damper with an input of 950,000 Btuh (278.25 kW). Ventilation air is communicating to the units through a hole in the outside wall covered by wire mesh having a free air allowance of 80%. The wire mesh must have a minimum area of:

Select one:
a.17.5 in.2in.2 (113 cm2cm2)
b.20 in.2in.2 (129 cm2cm2)
c.14 in.2in.2 (90 cm2cm2)
d.25 in.2in.2 (161 cm2cm2)
Your answer is incorrect.

8.4.2950,000 Btuh ÷ 7,000 BTU/in2in2 =135.714 in2in2

8.4.31,800,000 Btuh ÷ 30,000 BTU/in2in2 = 60 in2in2

Total air supply free area = 195.714 in2in2
8.4.1195.714 in2in2 × 10% = 19.571 in2in2

Ventilation free area = 19.571 in2in2
Ventilation grille area

19.571 in2in2 ÷ 80% = 24.464 in2in2
The correct answer is: 25 in.2in.2 (161 cm2cm2)
Question text

The minimum free area of an air supply duct installed within a single family dwelling (complying with clause 8.2.1) serving a 100,000 Btuh (29.3 kW) furnace and a 36,000 Btuh hot water tank, both equipped with draft hoods would be:

Select one:
a.$22\text{in.}^{2}(140\text{cm}^{2})$$22in.2(140cm2)$
b.$25\text{in.}^{2}(160\text{cm}^{2})$$25in.2(160cm2)$
c.$14\text{in.}^{2}(90\text{cm}^{2})$$14in.2(90cm2)$
d.$18\text{in.}^{2}(120\text{cm}^{2})$$18in.2(120cm2)$

Feedback

Your answer is incorrect.

Table 8.1

136,000 Btuh = 22 $\text{in.}^{2}$$in.2$

The correct answer is: $22\text{in.}^{2}(140\text{cm}^{2})$$22in.2(140cm2)$

Question text

A single family dwelling complying with clause 8.2.1. has a furnace with a rated input of 145,000 Btuh (39.54 kW) and a hot water tank with an input of 60,000 Btuh (17.58 kW). Both appliances are equipped with draft control devices. If the duct is 35 feet (10.67 m) in length, the minimum acceptable round duct would be:

Select one:
a.6 inch (175 mm)
b.6 inch (150 mm)
c.10 inch (250 mm)
d.7 inch (200 mm)

Feedback

Your answer is correct.

Table 8.1 and BCSA Directive

\(205 MBH = 32 inch sq. or 6 inch

increase 1 pipe size = 7inch

The correct answer is: 7 inch (200 mm)

A boiler room contains the following equipment:

- 1 - 3,000,000 Btuh (878.85 kW) appliance (barometric control)
- 2 - 300,000 Btuh (87.89 kW) hot water tanks (draft hoods)
- 1 - 10,000,000 Btuh (2,929.5 kW) boiler (barometric control)
- 1 - 2,000,000 Btuh (585.90 kW) duct heater (no draft control)

Calculate the free area required for the air supply opening:

Select one:
a.
$1{,}043\text{in.}^2(6{,}729\text{cm}^2)$ $1{,}043in.2(6{,}729cm2)$
b.
$1{,}110\text{in.}^2(7{,}161\text{cm}^2)$ $1{,}110in.2(7{,}161cm2)$
c.
$943\text{in.}^2(6{,}084\text{cm}^2)$ $943in.2(6{,}084cm2)$
d.
$520\text{in.}^2(3{,}355\text{cm}^2)$ $520in.2(3{,}355cm2)$

Feedback

Your answer is correct.

8.4.4Total input of appliances with draft control = 13,600 MBH

Total input of appliances without draft control = 2,000 MBH

8.4.2$1{,}000{,}000\text{Btuh}\div7{,}000\frac{\text{Btu}}{\text{in.}^2}=142.857\text{in.}^2$ $1{,}000{,}000Btuh\div7{,}000Btuin.2=142.857in.2$

$12{,}600{,}000\text{Btuh}\div14{,}000\frac{\text{Btu}}{\text{in.}^2}=900\text{in.}^2$ $12{,}600{,}000Btuh\div14{,}000Btuin.2=900in.2$
8.4.3$2{,}000{,}000\text{btuh}\div30{,}000\frac{\text{Btu}}{\text{in.}^2}=66.667\text{in.}^2$ $2{,}000{,}000btuh\div30{,}000Btuin.2=66.667in.2$

$\text{Total air supply free area }=1109.524\text{in.}^2$ $Total\ air\ supply\ free\ area\ =1109.524in.2$The correct answer is: $1{,}110\text{in.}^2(7{,}161\text{cm}^2)$ $1{,}110in.2(7{,}161cm2)$

Question text

A single family dwelling complying with 8.2.1 is equipped with a boiler and a hot water tank that have a total input of 140,000 Btuh (41 kW). Calculate the diameter of a round air supply duct if it is 12 feet (3.66 m) long and both appliances have draft control:

Select one:
a.6 inch (150 mm)
b.3 inch (75 mm)
c.5 inch (125 mm)
d.4 inch (100 mm)

Feedback

Your answer is incorrect.Table 8.1

$140\text{MBH}=22\text{in.}^2\text{or}5\text{in.diameter}$ $140MBH=22in.2or5in.diameter$

The correct answer is: 5 inch (125 mm)

Question text

A commercial building has a hot water boiler equipped with a draft control device with an input of 3,250,000 Btuh (951.82 kW). The air supply opening is a hole in the wall covered by a 50% free air grille. Calculate the area required for the air supply grille.:

Select one:
a.$163\text{in.}^2(1,051\text{cm}^2)$163in.2(1,051cm2)
b.$607\text{in.}^2(3,916\text{cm}^2)$607in.2(3,916cm2)
c.$109\text{in.}^2(703\text{cm}^2)$109in.2(703cm2)
d.$244\text{in.}^2(1,574\text{cm}^2)$244in.2(1,574cm2)

Feedback

Your answer is incorrect.

8.4.2

$1,000,000\text{Btuh} \div 7,000\frac{\text{Btu}}{\text{in.}^2} = 142.857\text{in.}^2$1,000,000Btuh÷7,000Btuin.2=142.857in.2
$2,250,000\text{Btuh} \div 14,000\frac{\text{Btu}}{\text{in.}^2} = 160.714\text{in.}^2$2,250,000Btuh÷14,000Btuin.2=160.714in.2
$\text{Total air supply free area } = 303.56\text{in.}^2$Total air supply free area =303.56in.2
$303.56\text{in.}^2 \div 50$303.56in.2÷50 % $=607.143\text{in.}^2$=607.143in.2
Thanks guys!

The correct answer is: $607\text{in.}^2(3,916\text{cm}^2)$607in.2(3,916cm2)

Question text

A boiler with a draft control device is fired to an input of 3,000,000 Btuh. What volume of air would be required if being supplied by a combustion air supply fan?

Select one:
a.45,000 CFH
b.90,000 CFH
c.3,000 CFH
d.30,000 CFH

Feedback

Your answer is incorrect.

8.8.3 Variations to the National Code

$3,000,000\text{Btuh} \div 1,000\frac{\text{Btu}}{\text{ft.}^3} = 3,000\text{CFH}$3,000,000Btuh÷1,000Btuft.3=3,000CFH
$3,000\text{CFH} \times 30 = 90,000\text{CFH}$3,000CFH×30=90,000CFH

The correct answer is: 90,000 CFH

Question text

Size the combustion air supply for a residential building complying with clause 8.2.1. The residence has a 140,000 Btuh mid-efficient furnace with no draft control and a 60,000 Btuh hot water tank with draft control. The duct runs 40 feet horizontally from the mechanical room:

Select one:
a.5 in.
b.6 in.
c.3 in.

d4 in.

Feedback

Your answer is correct.

Table 8.1

Appliance with draft control

4inch

Table 8.2

All appliances

\(200 MBH = 5 inch

increase 1 pipe size diameter

6 inch

The correct answer is: 6 in.

Question text

Calculate the openings required for mechanical room located inside a building that does not comply with clause 8.2.1. The mechanical room contains a natural draft boiler rated at 175,000 Btuh, and a natural draft unit heater rated at 75,000 Btuh . The Volume of the structure may be used to satisfy the air requirements of the mechanical room. The openings are to be covered by the wire mesh having a free air allowance of 80%:

Select one:
a.$250\text{in.}_2 250in.2$
b.$36\text{in.}_2 36in.2$
c.$45\text{in.}_2 45in.2$
d.$313\text{in.}_2 313in.2$

Feedback

Your answer is incorrect.

Code Clause 8.2.6

$250\text{MBH}=250\text{in.}._2 250MBH=250in..2$
$250\text{in.}_2\div 80 250in.2\div 80$ % $312.5\text{in.}_2 312.5in.2$

The correct answer is: $313\text{in.}_2 313in.2$

Question text

Calculate the size of openings required for a 1,750,000 Btuh natural draft boiler and a 750,000 Btuh boiler without draft control. The openings are to have louvers with a 60% free area:

Select one:
a.Air supply – 139 in.^{2} , Ventilation Air – 17 in.^{2}

b.Air supply – 416 in.^{2} , Ventilation Air – 42 in.^{2}
c.Air supply – 83 in.^{2} , Ventilation Air – 10 in.^{2}
d.Air supply – 369 in.^{2} , Ventilation Air – 37 in.^{2}

Feedback

Your answer is incorrect.

8.4.2

1,000,000 Btuh÷7,000 BTU/in2in2 = 142.857 in2in2
750,000 Btuh÷14,000 BTU/in2in2 = 53.571 in2in2
8.4.3

750,000 Btuh÷30,000 BTU/in2in2 =25 in2in2
Total air supply free area=221.428 in2in2
8.4.1

221.428 in2in2 × 10% = 22.143 in2in2
Ventilation free area = 22.143 in2in2
Air supply grille area

221.428 in2in2 ÷ 60% = 369.047 in2in2
Ventilation grille area

22.143 in2in2 ÷ 60% = 36.905 in2in2

The correct answer is: Air supply – 369 in.^{2} , Ventilation Air – 37 in.^{2}

Question text

Calculate the size of the air supply opening required for a building that does not comply with clause 8.2.1. The building contains a hot water tank rated at 55 MBH and a furnace rated at 125 MBH, both appliances have draft control devices and the volume of the structure is 6,000 Ft.^{3} The opening will be covered with louvers that have a free air allowance of 70%

Select one:
a.41 in.^{2}
b.29 in.2
c.23 in.^{2}
d.36 in.^{2}

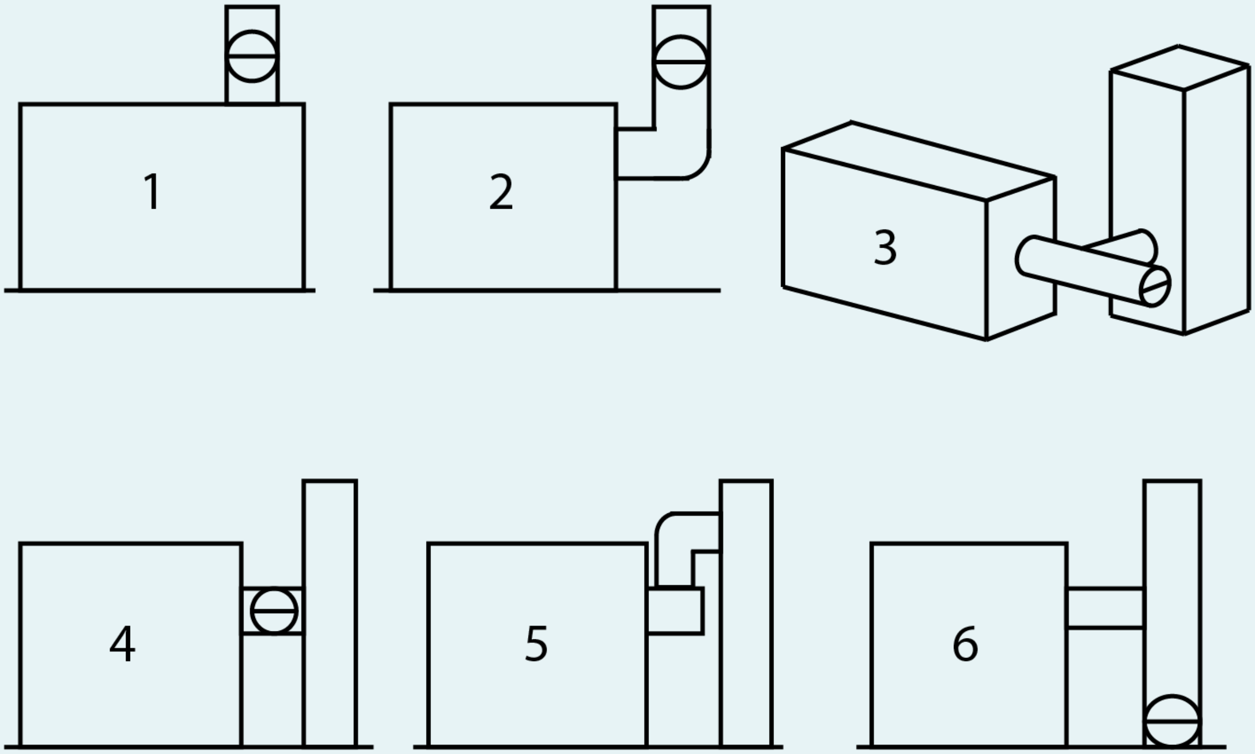
Your answer is correct.

Table 8.3

180 MBH = 29 in2in2
29 in2in2 ÷ 70% = 41.429 in2in2

The correct answer is: 41 in.^{2}

In the illustration below, which three diagrams have the barometric damper in the correct position?



Select one:
a.1,2,4
b.1,2,3
c.2,4,6
d.1,3,5

Feedback

Your answer is correct.

The correct answer is: 1,2,4

Question text

When initially setting up a barometric damper in a venting system:

Select one:
a.the gate must be set so the upper portion swings in, on an increase in up-draft
b.you must ensure closure of the gate with a down draft
c.the gate position must be determined with the use of an instrument (i.e., draft gauge or slope manometer)
d.the gate must be set at midpoint using weights

Feedback

Your answer is correct.The correct answer is: the gate position must be determined with the use of an instrument (i.e., draft gauge or slope manometer)

Question text

A draft in a vent is created by:

Select one:
a.the difference in densities of vent gases and ambient room air
b.atmospheric pressure and the height of the vent
c.the outdoor design temperature and diameter of the vent
d.the height and diameter of the vent

Feedback

Your answer is correct.

The correct answer is: the difference in densities of vent gases and ambient room air

Question text

Which of the following groups of appliances may be vented into Type B-vent?

Select one:
a.Gas boiler; oil furnace; gas space heater; gas dryer
b.Oil-fired boiler; gas furnace; gas space heater
c.Gas boiler; gas furnace; incinerator; gas space heater
d.Gas boiler; gas furnace; gas space heater

Feedback

Your answer is correct.

The correct answer is: Gas boiler; gas furnace; gas space heater

Question text

The type of draft that occurs in the combustion chamber of an appliance equipped with a draft hood is :

Select one:
a.negative over-fire draft
b.positive pressure draft
c.negative pressure draft
d.neutral over-fire draft

Feedback

Your answer is incorrect.

The correct answer is: neutral over-fire draft

Question text

The vent is :

Select one:
a.the vertical section of pipe that connects the furnace to the chimney
b.the horizontal section of pipe that connects the furnace to the chimney
c.the pipe that connects the furnace to the hot water heater

d.the portion of the venting system that conveys flue gases directly to the outdoors

Feedback

Your answer is correct.

The correct answer is: the portion of the venting system that conveys flue gases directly to the outdoors

Question text

Which of the following limitations apply to Type B-vents?

Select one:
a.May be used on Category II appliances
b.May only be used in the same room as appliance
c.Vent temperatures must not exceed 470 °F (243° C)
d.May be used on recessed wall heaters

Feedback

Your answer is correct.

The correct answer is: Vent temperatures must not exceed 470 °F (243° C)

Question text

One function of a draft hood is to :

Select one:
a.prevent back drafts in the common vent
b.allow for spillage
c.neutralize excess air
d.keep the vent cold

Feedback

Your answer is incorrect.

The correct answer is: allow for spillage

Question text

Insert the proper letter designation for each type of venting system:

Eg. A, B, C, L, BH, BW

Feedback

A Vent - flue gas temperatures greater than 470^0 F (243^0 C), wood stoves

B Vent - flue gas temperatures between 275^0 F (135^0 C) - 470^0 F (243^0 C) Category-1 appliances

L Vent - flue gas temperatures up to 570^0 F (300^0 C) combination gas and oil appliances.

BW Vent - same temperatures as "B" vent for recessed wall heaters

BH Vent - Class II a) 65^0 C b) 90^0 C c) 110^0 C d) 135^0 C

C Vent - vent connectors, wall thickness depends on

Venting

If a gas-fired appliance and an oil-fired appliance are both vented into a chimney through separate openings, the gas-fired appliance should be:

Select one:
a.at a lower level than the oil-fired appliance
b.you cannot connect a gas-fired an oil-fired furnace to a common chimney
c.at the same level as the oil-fired appliance
d.at a higher level than the oil-fired appliance

Feedback

Your answer is correct.

8.12.4

The correct answer is: at a higher level than the oil-fired appliance

Question text

What is the minimum horizontal clearance from an obstruction to a vent termination without increasing the height of the vent?

Select one:
a.10 ft. (3.66 m)
b.8 ft. (2.44 m)
c.4 ft. (1.22 m)
d.2 ft. (0.6 m)

Feedback

Your answer is incorrect.

8.14.2

The correct answer is: 10 ft. (3.66 m)

Question text

When can a gas appliance installed in a dwelling unit be connected to a flue serving a solid-fuel fireplace?

Select one:
a.If a Type "A" vent is installed
b.Never
c.When it is through a separate opening above the solid-fuel appliance
d.When the solid-fuel fireplace is sealed permanently

Feedback

Your answer is correct.

8.12.3

The correct answer is: When the solid-fuel fireplace is sealed permanently

Question text

The minimum allowable diameter for a round vent is:

Select one:
a.5 in. (12.7 cm)
b.2 in, (5.08 cm)
c.3 in. (7.62 cm)
d.4 in. (10.16 cm)

Feedback

Your answer is correct.

8.13.3

The correct answer is: 3 in. (7.62 cm)

Question text

What is the minimum gauge thickness of a 5 inch diameter single wall vent connector serving a draft hood appliance?

Select one:
a.No. 22 GSG
b.No. 24 GSG
c.No. 28 GSG
d.No. 26 GSG

Feedback

Your answer is incorrect.

8.18.3

The correct answer is: No. 28 GSG

Question text

A single-wall vent connector may pass through a floor or ceiling provided that:

Select one:
a.A single-wall vent may not pass through a floor or ceiling
b.a non-combustible insulation is used to prevent combustible surfaces from exceeding 194°F (90°C)
c.it has a thimble 6 in. larger than the vent connector diameter
d.it has a thimble 4 in. larger than the vent connector diameter

Feedback

Your answer is incorrect.

8.18.23

The correct answer is: A single-wall vent may not pass through a floor or ceiling

Question text

Type "BW" vent may only be used with:

Select one:
a. a single draft hood boiler
b. a single recessed wall furnace
c. a single fan assisted furnace
d. a single power vented hot water heater

Feedback

Your answer is correct.

8.10.8

The correct answer is: a single recessed wall furnace

Question text

Except for a special venting system, the minimum distance above a roof for any vent is

Select one:
a. 900 mm
b. 300 mm
c. 600 mm
d. 200 mm

The correct answer is: 600 mm

Question text

What is the minimum size of a metal thimble used on a vent connector 8 feet long passing through a sidewall, if the vent connector has a diameter of 4-inches?

Select one:
a. 8 in.
b. 10 in.
c. 6 in.
d. 4 in.

Feedback

Your answer is correct.

8.18.12

The correct answer is: 6 in.

Question text

When a vent connector from a Category I appliance passes through an **unheated** space it shall be:

Select one:
a.Type BH-vent
b.Type B-vent

c.insulated with minimum R-6 rated insulation
d.Type A-vent

Feedback

Your answer is incorrect.

8.18.21

The correct answer is: Type B-vent

Question text

The common vent portion of a multiple appliance venting system shall be :

Select one:
a. Type C-vent is acceptable as long as it doesn't pass through a floor or ceiling
b. Type BH-vent
c. Type BW-vent
d. Type B or L-vent

Feedback

Your answer is correct.

8.21.5

The correct answer is: Type B or L-vent

Question text

Which of the following is ***true*** with regards to the common vent serving two appliances, one from each half of a semi-detached dwelling:

Select one:
a. both appliances must have draft hoods
b. this configuration is not permitted
c. total input of the common vent may not exceed 400 MBH (120 kW)
d. both appliances must be fan-assisted

Feedback

Your answer is correct.

8.12.11

The correct answer is: this configuration is not permitted

Question text

When two or more vent connectors enter a common vent or chimney they shall:

Select one:
a.enter at the same level
b.enter at different levels with no regard to size or temperature of connector
c.enter at different levels with the smallest connector at the highest level
d.enter at different levels with the smallest connector at the lowest level

The correct answer is: enter at different levels with the smallest connector at the highest level

Gas valves

Select the components in a typical valve train :

Select one or more:
a.
Manual shut-off

b.
Automatic gas valve

c.
Main Burner

d.
Appliance regulator

e.
Pilot Burner

f.
Thermocouple

g.
Appliance shut-off valve
h.
Automatic safety shut-off
i.
B-cock
j.
A-cock

Feedback

Your answer is partially correct.

You have correctly selected 4.
The correct answers are: Appliance shut-off valve, Automatic safety shut-off, A-cock, B-cock, Appliance regulator, Automatic gas valve, Pilot Burner, Thermocouple, Main Burner

Question **2**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Select the similarity between a “plug” valve and “ball” valve :-

Select one:
a.
Both valves can be serviced without interrupting gas flow.

b.
Both valves open and close by a 180 degree turn of a handle.

c.
Both valves open and close in a quarter-turn.
d.
Both valves have a lubricate type for outdoor use.

Feedback

Your answer is correct.

The correct answer is: Both valves open and close in a quarter-turn.

Question **3**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Complete the following sentence.

Plug valves use copper or brass ballconcentric metal plugtapered plugstainless steel ball rather than a copper or brass ballconcentric metal plugtapered plugstainless steel ball .

Feedback

Your answer is incorrect.

The correct answer is:
Complete the following sentence.

Plug valves use [tapered plug] rather than a [stainless steel ball].

Question **4**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What powers the automatic safety shut-off valve?

Select one:
a.
The pilot gas line.

b.
The main gas line.

c.
A thermocouple or thermopile
d.
The 120/24 volt transformer

Feedback

Your answer is incorrect.

The correct answer is: A thermocouple or thermopile

Question **5**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the purpose of the pilot flame?

Select one:
a.
To prove the main burner is functioning properly

b.
To ensure gas is flowing through the system

c.
To light the main burner
d.
To heat the thermocouple

Feedback

Your answer is incorrect.

The correct answer is: To light the main burner

Question **6**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Identify the name of the system where the automatic safety shut-off valve controls gas flow to both the main burner and the pilot burner:

Select one:
a.
Safety Perfection

b.
100% safe
c.
Never Fail

d.
Dual Control

Feedback

Your answer is correct.

The correct answer is: 100% safe

Question **7**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What is F.F.R.T an abbreviation for ?

Select one:
a.
Flame Flashback Response Time

b.
Flame Failure Real Time

c.
Flame Failure Response Time
d.
Flame Failure Re-attempt Time

Feedback

Your answer is correct.

The correct answer is: Flame Failure Response Time

Question **8**
Incorrect
Mark 0.00 out of 2.00
Flag question

Question text

What is the maximum FFRT for a 300,000 Btuh appliance operating on:

a) CH_4 = Answer

seconds
b) C3H8 = Answer

seconds

Question **9**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Where is the appliance regulator located in relation to the automatic gas valve?

Select one:
a.
Upstream of automatic safety shut-off valve and downstream main burner.

b.
Downstream of the automatic gas valve

c.
After the B-cock and before A-cock

d.
Upstream of the automatic gas valve

Feedback

Your answer is incorrect.

The correct answer is: Upstream of the automatic gas valve

Question **10**
Incorrect
Mark 0.00 out of 2.00
Flag question

Question text

What controls (energizes) the automatic gas valve on a::

a) Furnace = AnswerThermocoupleThermostatAquastat

b) Boiler = AnswerAquastatThermostatThermocouple

Feedback

What controls (energizes) the automatic gas valve on a::

a) Furnace =Thermostat

b) Boiler =Aquastat

What voltage(s) does a solenoid style automatic gas valve require?

Select one:
a.
24 volts or millivolts

b.
120 volts or 24 volts
c.
120 volts, 24 volts, millivolts or Micro-volts

d.
120 volts, 24 volts or millivolts

Feedback

Your answer is incorrect.

The correct answer is: 120 volts or 24 volts

Question **2**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the main opening and closing force of a diaphragm valve?

Select one:
a.
Downstream gas pressure

b.
Upstream gas pressure
c.
Spring pressure

d.

Diaphragm closing force

Feedback

Your answer is incorrect.

The correct answer is: Upstream gas pressure

Question **3**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

A diaphragm gas valve regulates pressure.

Select one:

True

False

Feedback

The correct answer is 'False'.

Question **4**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

What voltage is required for a diaphragm gas valve? Select all that apply

Select one or more:

a.
240 volts

b.
12 volts

c.
120 volt

d.
24 volt

e.
Millivoltage

Feedback

Your answer is incorrect.

The correct answers are: 120 volt, 24 volt, Millivoltage

Question **5**
Not answered
Marked out of 1.00
Flag question

Question text

Combination gas valves differ from diaphragm valves by housing the components of the valve train in a single unit.

Select one:
True
False

Feedback

Combination gas valves combine the components of the valve train in a single unit; Safety shut-off, A-cock, B-cock, appliance regulator and automatic gas valve.

The correct answer is 'True'.

Question **6**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A combination diaphragm gas valve regulates the pressure to the pilot burner.

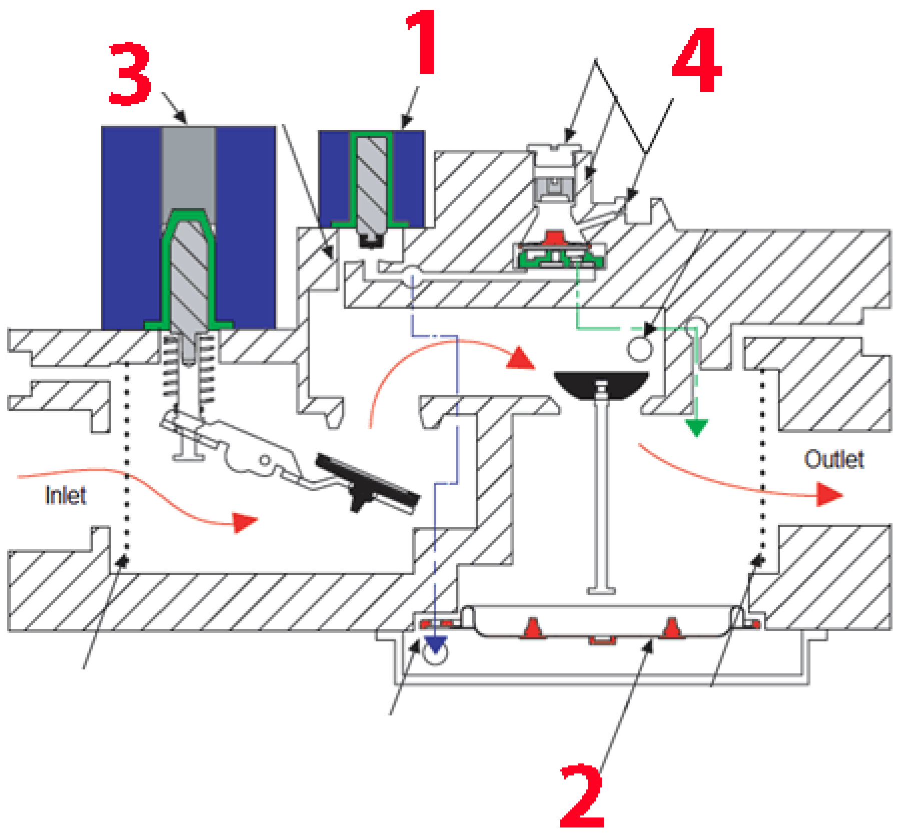
Select one:
True
False

Feedback

The correct answer is 'False'.

Question **7**
Not answered
Marked out of 1.00
Flag question

Question text



Please match the following locations from the image above with corresponding location descriptions.

Location #1 = Main Valve CoilOutlet Pressure TappingWorking Gas ChannelMain Valve DIaphragmInletRegulatorOutlet ScreenPilot Valve Coil

Location #2 = Main Valve CoilOutlet Pressure TappingWorking Gas ChannelMain Valve DIaphragmInletRegulatorOutlet ScreenPilot Valve Coil

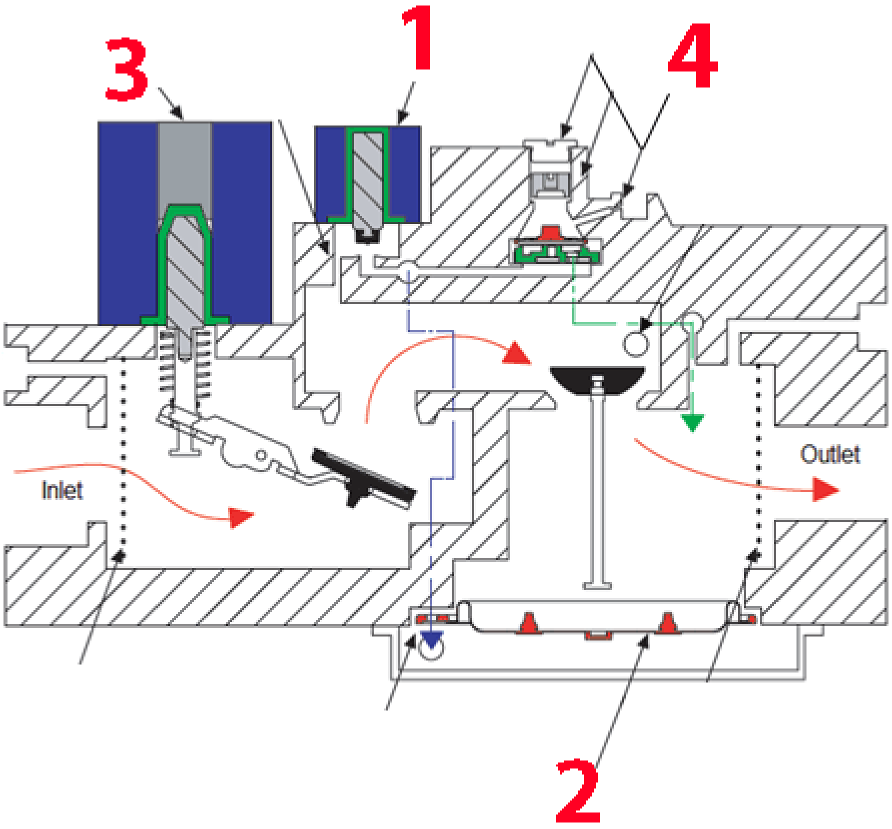
Location #3 = Main Valve CoilOutlet Pressure TappingWorking Gas ChannelMain Valve DIaphragmInletRegulatorOutlet ScreenPilot Valve Coil

Location #4 = Main Valve CoilOutlet Pressure TappingWorking Gas ChannelMain Valve DIaphragmInletRegulatorOutlet ScreenPilot Valve Coil

Feedback

Your answer is incorrect.

The correct answer is:



Please match the following locations from the image above with corresponding location descriptions.

Location #1 = [Main Valve Coil]

Location #2 = [Main Valve DIaphragm]

Location #3 = [Pilot Valve Coil]

Location #4 = [Regulator]

Question **8**

Not answered

Marked out of 1.00

Flag question

Question text

What are the typical manifold pressure ranges from a two stage gas valve supplying CH4?

a) Low Fire = 6 - 7.5 inches wc4 - 5 inches wc5 - 6 inches wc1.5 - 3 inches wc1-1.5 inches wc3 - 4 inches wc

b) High Fire = 6 - 7.5 inches wc4 - 5 inches wc5 - 6 inches wc1.5 - 3 inches wc1-1.5 inches wc3 - 4 inches wc

Feedback

Your answer is incorrect.

The correct answer is:
What are the typical manifold pressure ranges from a two stage gas valve supplying CH4?

a) Low Fire = [1-1.5 inches wc]

b) High Fire = [3 - 4 inches wc]

Question **9**
Not answered
Marked out of 1.00
Flag question

Question text

Please match the following definitions with the appropriate pilot ignition system.

A pilot that burns at low turndown throughout the entire time the burner is in service, whether or not the main burner is firing, except that upon a call for heat, the fuel flow to the pilot is automatically increased to produce a flame that will reliably ignite the main burner fuel.	Answer 1Choose...Interrupted PilotExpanding PilotContinuous PilotIntermittent Pilot
A pilot that is automatically lighted each time there is a call for heat and that is cut off automatically at the end of the trial-for-ignition period of the main burner.	Answer 2Choose...Interrupted PilotExpanding PilotContinuous PilotIntermittent Pilot
A pilot that is automatically lighted each time there is a call for heat and that burns during the entire time the main burner is firing	Answer 3Choose...Interrupted PilotExpanding PilotContinuous PilotIntermittent Pilot
A pilot that burns without turndown throughout the entire time the burner is in service, whether the main burner is firing or not.	Answer 4Choose...Interrupted PilotExpanding PilotContinuous PilotIntermittent Pilot

Feedback

Your answer is incorrect.

The correct answer is: A pilot that burns at low turndown throughout the entire time the burner is in service, whether or not the main burner is firing, except that upon a call for heat, the fuel flow to the pilot is automatically increased to produce a flame that will reliably ignite the main burner fuel. → Expanding Pilot, A pilot that is automatically lighted each time there is a call for heat and that is cut off automatically at the end of the trial-for-ignition period of the main burner. → Interrupted Pilot, A pilot that is automatically lighted each time there is a call for heat and that burns during the entire time the main burner is firing → Intermittent Pilot, A pilot that burns without turndown throughout the entire time the burner is in service, whether the main burner is firing or not. → Continuous Pilot

Question **10**

Not answered

Marked out of 1.00

Flag question

Question text

What type of pilot is used with a redundant gas valve?

Select one:

a.

Continuous Pilot

b.

Intermittent Pilot

c.

Interrupted Pilot

d.

Expanding Pilot

Feedback

Your answer is incorrect.

Intermittent – the pilot valve is wired separately from the main valve, pilot valve is energized, pilot is lit and proved by the flame detection circuit, the main valve is energized allowing gas to the main burner. and pilot say on until the call for heat ends.

The correct answer is: Intermittent Pilot

Question **11**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

Match the following description with the correct gas valve and pilot:

On a call for heat, the inducer fan is energized providing a pre-purge of the combustion chamber, igniter and pilot valve are energized, when the pilot is proven the main valve is energized, the servo regulator monitors downstream pressure adjusting the main valve diaphragm as necessary.

Select one:

a.

Diaphragm gas valve + expanding pilot

b.
Solenoid gas valve + continuous pilot

c.
Redundant gas valve + continuous pilot

d.
Diaphragm gas valve + intermittent pilot

e.
Solenoid gas valve + intermittent pilot

f.
Redundant gas valve + intermittent pilot

Feedback

Your answer is incorrect.

The correct answer is: Redundant gas valve + intermittent pilot

Question **12**
Not answered
Marked out of 1.00
Flag question

Question text

Put the following items in the correct sequence and order if used to describe the heating cycle for a furnace using a hot surface igniter with a redundant gas valve.

On a call for heat...

step 1: the variable gas valve performs a pre-purge the hot surface igniter is energizedwhen complete, the pilot valve is energized and ignited, following successful pilot ignition the main valve is energizedwhen complete, both the pilot and main valve are energizedthe inducer fan performs a pre-purge of the combustion chamber ,

step 2: the variable gas valve performs a pre-purge the hot surface igniter is energizedwhen complete, the pilot valve is energized and ignited, following successful pilot ignition the main valve is energizedwhen complete, both the pilot and main valve are energizedthe inducer fan performs a pre-purge of the combustion chamber , step 3: the variable gas valve performs a pre-purge the hot surface igniter is energizedwhen complete, the pilot valve is energized and ignited, following successful pilot ignition the main valve is energizedwhen complete, both the pilot and main valve are energizedthe inducer fan performs a pre-purge of the combustion chamber .

Feedback

Your answer is incorrect.

The correct answer is:
Put the following items in the correct sequence and order if used to describe the heating cycle for a furnace using a hot surface igniter with a redundant gas valve.

On a call for heat...

step 1: [the inducer fan performs a pre-purge of the combustion chamber],

step 2: [the hot surface igniter is energized],

step 3: [when complete, both the pilot and main valve are energized].

Question **13**
Not answered
Marked out of 1.00
Flag question

Question text

Select the type of gas valve that would best match the description below:

After the pre-purge period, the pilot valve is energized and the low-fire servo regulator maintains a manifold pressure between 1 – 1.5 in. w.c., if the thermostat determines that the call for heat cannot be satisfied in a reasonable time, the regulator selector valve coil is energized and the high-fire servo regulator will maintain a downstream pressure of 3 – 4 in. w.c.

Select one:
a.
Solenoid gas valve

b.
Two stage gas valve

c.
Nova gas valve

d.
Rod and tube gas valve

Feedback

Your answer is incorrect.

The correct answer is: Two stage gas valve

Question **14**
Not answered
Marked out of 2.00
Flag question

Question text

What is the name of the control valve used on domestic storage type water heaters? View the valves sequence of operation in the feedback after you submit your answer.

Answer

and Answer

gas valve

Feedback

R&T sequence of operation = When the water is heated, the copper tube expands pulling the invar rod and closes the gas valve. As the water cools, the copper tube contracts pushing the invar rod against the clicker mechanism opening the valve.

Question **15**
Not answered
Marked out of 1.00
Flag question

Question text

On a “Call for Heat” when utilizing a rod and tube control valve, which of the following statements is correct?

Select one:
a.
The Invar rod has expanded and the gas valve is closed.
b.
The Invar rod has expanded and the copper tube has opened the gas valve.
c.
The copper tube has expanded and the gas valve is open

d.
The copper tube has contracted and the Invar rod has opened the gas valve

Feedback

Your answer is incorrect.

The correct answer is: The copper tube has contracted and the Invar rod has opened the gas valve

Question **16**
Not answered
Marked out of 1.00
Flag question

Question text

What does "E.C.O" stand for?

Select one:
a.
Energy Cut-Off

b.
Electric Cut-Off

c.
Emissions Cut-Off

d.
Environmental Cut-Off

Feedback

Your answer is incorrect.

The E.C.O is a fusible link that is wired in series with the thermocouple and the safety shut-off valve. If the water temperature exceeds its preset temperature (usually 200^0 F (93^0 C)) the fusible link melts de-energizing the safety shut-off valve closing the valve.

The correct answer is: Energy Cut-Off

Question **17**
Not answered
Marked out of 1.00
Flag question

Question text

Where might you **typically** find a hydraulic gas control?

Select one:
a.
Large commercial appliances (excluding boilers)

b.
Recreational vehicle appliances

c.
Residential appliances

d.
Industrial boilers

Feedback

Your answer is incorrect.

These types of valves are typically found in an appliance on a recreational vehicle. The reason for this is because it does not require electricity.

The correct answer is: Recreational vehicle appliances

Question **18**
Not answered
Marked out of 1.00
Flag question

Question text

What is the purpose of an O.D.S?

Select one:
a.
De-energize the gas valve if the oxygen level drops below 18%

b.
Stops the flow of fuel if no heat is detected from a continuous pilot

c.
Regulates the electric load going to a gas valve when a steady voltage of 24v or 120v fluctuates too much (remote installations)

d.
Monitors the pressure of a two stage gas valve and de-energizes the valve if the pressure exceeds 6 inches wc

Feedback

Your answer is incorrect.

It de-energizes the gas valve if the oxygen level drops to 18%. Table top patio heaters.

The correct answer is: De-energize the gas valve if the oxygen level drops below 18%

Question **19**
Not answered
Marked out of 1.00
Flag question

Question text

Where would you locate the shut-off valve that is interlocked with a fire suppression system?

Select one:
a.
Inside the area protected by the fire suppression system

b.
Inside or Outside the fire suppression system

c.
On an exterior building wall within 5 meters of any additional fuel or water lines

d.
Outside the area protected by the fire suppression system

Feedback

Your answer is incorrect.

The correct answer is: Outside the area protected by the fire suppression system

Question **20**
Not answered
Marked out of 1.00
Flag question

Question text

Does an earthquake valve need to be reset manually or is it reset automatically?

Select one:
a.
Manually

b.
Automatically

Feedback

Your answer is incorrect.

Once triggered the valve must be reset manually incase the downstream piping is damaged due to the earthquake.

The correct answer is: Manually

Question **21**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A diaphragm gas valve controls the flow of gas to :

Select one:
a.
the main burner
b.
the safety valve
c.
the pilot burner
d.
the pressure regulator

Feedback

Your answer is incorrect.

The correct answer is: the main burner

Question **22**
Not answered
Marked out of 1.00
Flag question

Question text

When the coil in a diaphragm gas valve is energized :

Select one:
a.
the armature is pulled towards it blocking the vent port
b.
the armature is pulled towards it blocking the pressure port
c.
the thermal element is energized closing the valve
d.
the armature is pulled into the center of the coil allowing gas to flow through the valve

Feedback

Your answer is incorrect.

The correct answer is: the armature is pulled towards it blocking the pressure port

Question **23**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

If the coil in a diaphragm gas valve is energized and the valve doesn't open, what could be the problem?

Select one:
a.
Plugged pressure port
b.
Ruptured diaphragm
c.
Plugged vent port
d.
Broken armature return spring

Feedback

Your answer is incorrect.

The correct answer is: Plugged vent port

Question **24**
Not answered
Marked out of 1.00
Flag question

Question text

When the call for heat is satisfied and if the diaphragm gas valve fails to close, what could be the problem?

Select one:
a.
Plugged vent port
b.
Plugged pressure port
c.
Faulty thermocouple
d.
The manifold pressure is too high

Feedback

Your answer is incorrect.

The correct answer is: Plugged pressure port

Question **25**
Not answered
Marked out of 1.00
Flag question

Question text

What would be the problem, if on a call for heat the main burner fires but when the call for heat is satisfied, the main burner stays lit but also a flame starts at the outlet of the vent line from the diaphragm gas valve?

Select one:
a.
Plugged vent port
b.
Faulty coil
c.
Broken armature return spring
d.
Plugged pressure port

Feedback

Your answer is incorrect.

The correct answer is: Broken armature return spring

Question **26**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A solenoid gas valve is in the open position when:

Select one:
a.
the valve is not pressurized
b.
the valve is pressurized
c.
the coil is not energized
d.
the coil is energized

Feedback

Your answer is incorrect.

The correct answer is: the coil is energized

Question **27**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following voltages would not be used to energize a diaphragm gas valve?

Select one:
a.

120 V

b.
750 mV

c.
24 V

d.
30 mV

Feedback

Your answer is incorrect.

The correct answer is: 30 mV

Question **28**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following voltages could be used to energize a solenoid gas valve?

Select one:
a.
750 MV

b.
24 V

c.
30 MV

d.
10 MV

Feedback

Your answer is incorrect.

The correct answer is: 24 V

Question **29**
Not answered
Marked out of 1.00
Flag question

Question text

A solenoid gas valve would be installed:

Select one:
a.

upstream of the appliance regulator
b.
downstream of the safety valve
c.
upstream of the pilot connection
d.
upstream of the safety valve

Feedback

Your answer is incorrect.

The correct answer is: downstream of the safety valve

Question **30**
Not answered
Marked out of 1.00
Flag question

Question text

The closing force of a diaphragm gas valve is :

Select one:
a.
inlet gas pressure and electro-magnetism
b.
inlet gas pressure and spring pressure
c.
outlet gas pressure and total force
d.
outlet gas pressure and spring pressure

Feedback

Your answer is incorrect.

The correct answer is: inlet gas pressure and spring pressure

Question **31**
Not answered
Marked out of 1.00
Flag question

Question text

A servo pressure regulator controls:

Select one:
a.
the pressure to the SSOV (safety shut-off valve)
b.

the pressure to the main burner
c.
the pressure to both the main burner and the pilot burner
d.
the pressure to the pilot burner

Feedback

Your answer is incorrect.

The correct answer is: the pressure to the main burner

Question **32**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following valves would never require electricity to operate ?

Select one:
a.
Redundant gas valve
b.
Solenoid gas valve
c.
Seismic valve
d.
Diaphragm gas valve

Feedback

Your answer is incorrect.

The correct answer is: Seismic valve

Question **33**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following valves would be used with an intermittent pilot system?

Select one:
a.
Safety shut-off valve
b.
Diaphragm gas valve
c.

Solenoid gas valve
d.
Redundant gas valve

Feedback

Your answer is incorrect.

The correct answer is: Redundant gas valve

Question **34**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A solenoid gas valve installed upside down may :

Select one:
a.
stay closed when the valve is energized
b.
open very quickly causing flame lift off
c.
remain fully open and never close
d.
open very slowly causing flashback

Feedback

Your answer is incorrect.

The correct answer is: remain fully open and never close

Question **35**
Not answered
Marked out of 1.00
Flag question

Question text

The safety shut-off valve is held open by:

Select one:
a.
spring pressure
b.
atmospheric pressure
c.
gas pressure under the diaphragm
d.

a thermocouple

Feedback

Your answer is incorrect.

The correct answer is: a thermocouple

Gas code An installation permit may not be issued to:

Select one:
1.
a person who holds an operating permit

2.
a licensed contractor
3.
an owner of a regulated product

4.
a renter who applies on behalf of the homeowner to perform regulated work as permitted under the regulations

Feedback

Your answer is correct.

Safety Standards General Regulations #17

The correct answer is: a renter who applies on behalf of the homeowner to perform regulated work as permitted under the regulations

Question **2**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

The term “gas equipment” includes :

Select one:
a.
the appliance

b.
the piping

c.

All the options are correct

d.
the fuel container

Feedback

Your answer is correct.

Gas Safety Regulations –“Definitions for the Act”

The correct answer is: All the options are correct

Question **3**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

"The plant or premises where gas received from a pipe line is metered, reduced in pressure and prepared for distribution to individual users of the gas” is a good definition of the term:

Select one:
a.
Monitored point

b.
Regulated point

c.
City Gate

d.
Meter point

Feedback

Your answer is incorrect.

Gas Safety Regulations “Definitions for the Act.

The correct answer is: City Gate

Question **4**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

A “fully detached dwelling” is:

Select one:
1.
a detached building occupied by the owner

2.
a detached building containing multiple dwellings

3.
a detached building occupied by a single renter

4.
a detached building occupied by more than one renter

Feedback

Your answer is correct.

Gas Safety Regulations “Definitions for the Act”

The correct answer is: a detached building occupied by the owner

Question **5**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Which type of regulatory notice related to the safety standards act and regulations is described below?

"A document that provides helpful information on safety, administrative requirements, or other matters."

Select one:
a.
Safety Order

b.
Directive

c.
Work Permit

d.
Information Bulletin

Feedback

Your answer is incorrect.

Which type of regulatory notice related to the safety standards act and regulations is described below?

"A document that provides helpful information on safety, administrative requirements, or other matters."

1. Home - Regulatory Resources - Regulatory Notices

The correct answer is: Information Bulletin

Question **6**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

A service meter can be installed by:

Select one:
a.
any Class “B” fitter

b.
an authorized employee of the gas utility company

c.
any Class “A” fitter

d.
all the options are correct

Feedback

Your answer is correct.

Gas Safety Regulations “Definitions for the Act”

The correct answer is: an authorized employee of the gas utility company

Question **7**
Correct
Mark 1.00 out of 1.00

Flag question

Question text

An applicant for a Class “A” gas fitter’s certificate of qualification must have held a Class “B” gas fitter’s certificate of qualification for a minimum of:

Select one:
a.
3 Years

b.
1 Years

c.
2 Years

d.
5 Years

Feedback

Your answer is correct.

Gas Safety Regulations #6 (1)(b)

The correct answer is: 2 Years

Question **8**

Correct
Mark 1.00 out of 1.00
Flag question

Question text

A Class “B” gas fitter certificate of qualification does not entitle the holder to perform the installation or alteration of:

Select one:
a.
a fan-assisted appliance rated for 280,000 Btuh (82 kW)

b.
an atmospherically-fired appliance rated for 350,000 Btuh (103 kW)

c.
a power burner rated for 512,000 Btuh (150 kW)

d.
all the options are correct

Feedback

Your answer is correct.

Gas Safety Regulations #7

The correct answer is: a power burner rated for 512,000 Btuh (150 kW)

Question **9**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

A Class “B” gas fitter can perform electrical work that is restricted to the installation, repair and maintenance of appliances firing on:

Select one:
a.
gaseous, liquid, or solid fuels

b.
non-gaseous fuels only

c.
gaseous fuels only

d.
gaseous or liquid fuels only

Feedback

Your answer is correct.

Gas Safety Regulations #8

The correct answer is: gaseous, liquid, or solid fuels

Question **10**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A Class “B” gas fitter is not allowed to install a thermostat if the voltage exceeds:

Select one:
a.

120 VAC

b.
24 VAC

c.
240 VAC

d.
750 millivolts

Feedback

Your answer is incorrect.

Gas Safety Regulations #8

The correct answer is: 24 VAC

Question **11**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A Class “B” gas fitter is allowed to install:

Select one:
a.
Class 1 circuit wiring up to a rated output of 100 volt amps

b.
Class 2 circuit wiring up to a rated output of 200 volt amps

c.
Class 2 circuit wiring up to a rated output of 100 volt amps

d.
Class 1 circuit wiring up to a rated output of 200 volt amps

Feedback

Your answer is incorrect.

Gas Safety Regulations #8

The correct answer is: Class 2 circuit wiring up to a rated output of 100 volt amps

Question **12**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A “Gas Appliance Service” Certificate of Qualification entitles the holder to service:

Select one:

1.
a commercial furnace if its rated capacity does not exceed 82 kW

2.
a central air conditioning system if its rated capacity does not exceed 177 kW

3.
an industrial heating unit if its rated capacity does not exceed 100 kW

4.
a commercial steam boiler if its rated capacity does not exceed 117 kW

Feedback

Your answer is incorrect.

Gas Safety Regulation #11

The correct answer is: a commercial furnace if its rated capacity does not exceed 82 kW

Question **13**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

The owner of a fully detached dwelling may do regulated work under a homeowners permit if:

Select one:

a.
the homeowner gets assistance from an immediate family member but does not identify them on the permit

b.
the homeowner hires the local gas safety officer but does not identify them on the permit

c.
the homeowner hires a gas fitter to assist him/her and identifies the gas fitter on the permit

d.
the homeowner gets assistance from the tenant of the building and identifies him/her on the permit

Feedback

Your answer is incorrect.

Gas Safety Regulation #24

The correct answer is: the homeowner gets assistance from an immediate family member but does not identify them on the permit

Question **14**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Which of the following installations must be inspected prior to initial startup?

Select one:
a.
A forced draft appliance, rated for 450,000 Btuh

b.
A high efficiency furnace, rated for 150,000 Btuh

c.
A mid-efficiency hot water boiler, rated for 250,000 Btuh

d.
A residential conversion burner, rated for 120,000 Btuh

Feedback

Your answer is correct.

Gas Safety Regulation #26

The correct answer is: A forced draft appliance, rated for 450,000 Btuh

Question **15**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

After reinstalling a direct-fired make-up air heater, a Class “A” gas fitter must:

Select one:

a.
test it before firing it up or calling for an inspection

b.
call for an inspection before installing it

c.
call for an inspection before testing it or firing it up

d.
fire it up before testing it or calling for an inspection

Feedback

Your answer is correct.

Gas Safety Regulations #26

The correct answer is: call for an inspection before testing it or firing it up

Question **16**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A person must not use a portable heater for temporary heating unless :

Select one:
a.
the heater bears a current decal, valid for 2 years, applied by a gas fitter certifying as to its safety and operation

b.
the heater bears a current decal, valid for 5 years, applied by a provincial safety officer

c.
the heater bears a current decal, valid for 2 years, applied by an approved testing agency certifying as to its safety and operation

d.
the heater bears a current decal, valid for 5 years, applied by a gas fitter certifying as to its safety and operation

Feedback

Your answer is incorrect.

Gas Safety Regulation #31

The correct answer is: the heater bears a current decal, valid for 2 years, applied by a gas fitter certifying as to its safety and operation

Question **17**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

When must the holder of the permit inform the regulatory authority that the regulated work has been performed in accordance with the Act and request an inspection?

Select one:
a.
24 hours before completion of the regulated work

b.
Within 7 days of completion of the regulated work

c.
Upon final completion of the regulated work

d.
At the completion of each phase of the regulated work

Feedback

Your answer is incorrect.

Gas Safety Regulation #34

The correct answer is: At the completion of each phase of the regulated work

Question **18**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

On final completion of the regulated work authorized by a permit, the holder of the permit must immediately complete and submit:

Select one:
1.
a “Notification of Completion, Installation or Alteration” form

2.
a “Cease and Desist” form

3.
a “Requisition For Inspection” form

4.
an affidavit verifying the accuracy of the completed work

Feedback

Your answer is incorrect.

Gas Safety Regulation #34

The correct answer is: a “Notification of Completion, Installation or Alteration” form

Question **19**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

A person who causes damage to a gas installation must immediately notify:

Select one:
a.
the relevant gas company of the damage only if gas is escaping

b.
the relevant gas company of the damage even if no gas is escaping

c.
WorkSafe BC and the local authority having jurisdiction of the damage if gas is escaping

d.
the local safety manager of the damage if gas is escaping

Feedback

Your answer is incorrect.

Gas Safety Regulation #45

The correct answer is: the relevant gas company of the damage even if no gas is escaping

Question **20**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

If a gas supply has been turned off, a person must not turn the supply on again until the person notifies:

Select one:
a.
the local gas contractor

b.
the local police and fire department

c.
all affected consumers

d.
the local safety manager

Feedback

Your answer is incorrect.

Gas Safety Regulations #53

The correct answer is: all affected consumers

Question **21**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

A person who finds any appliance beyond repair or in an unsafe condition must:

Select one:
a.
repair the appliance immediately and promptly notify a safety officer of the repair that has been done to the appliance

b.
place the appliance out of service and promptly notify a safety officer of its condition and location

c.
repair the appliance immediately

d.
place the appliance out of service

Feedback

Your answer is correct.

Gas Safety Regulations #54

The correct answer is: place the appliance out of service and promptly notify a safety officer of its condition and location

Question **22**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Who is responsible for maintaining gas-fired appliances in a rental suite?

Select one:
a.
The manager of the building

b.
The local gas contractor

c.
The owner of the building

d.
The tenant

Feedback

Your answer is incorrect.

Gas Safety Regulations #55

The correct answer is: The owner of the building

Question **23**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

When a gas system installation has been completed, a gas fitter must affix a tag bearing

Select one:
a.
the gas fitter’s name

b.
All the options are correct

c.
certificate of qualification number

d.
type of appliance

Feedback

Your answer is correct.

Gas Safety Regulations #56

The correct answer is: All the options are correct

Your answer is partially correct.

You have correctly selected 1.
The correct answer is: _____________ and _______________ where gas is to be used for fuel purposes. → Appliances, Equipment / Components , Accessories, stationary gas ___________________ → Engines and Turbines, ___________________and associated equipment meeting the requirements of a general-purpose appliance to fill a natural-gas-fuelled vehicle; and

→ Vehicle-Refueling Appliances, _______________extending from the termination of the utility installation or from the distributor's propane tank → Piping / Tubing systems

The B149.1 code applies to utility pipeline distribution and transmission pipelines

Select one:
True
False

Feedback

(Code Clause 1.2)

The correct answer is 'False'.

our answer is partially correct.

You have correctly selected 3.
(Code Clause 1.3)

The correct answers are: Natural Gas, Manufactured Gas, Mixtures of Propane Gas and Air, Propane, Propylene, Butanes, Butylenes

What is the full form of CSA ?

Select one:
a.
Canadian Statistics Association

b.
Country Statics Association

c.
Canadian Standards Association

d.
Canadian Student Association

Feedback

Your answer is correct.

The correct answer is: Canadian Standards Association

Question **5**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What is the full form of ANSI ?

Select one:
a.
American National Statistics Institute

b.
American Nominal Standard Institute

c.
American National Standards Information

d.
American National Standards Institute

Feedback

Your answer is correct.

The correct answer is: American National Standards Institute

Question **6**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

What is the full form of ASME ?

Select one:
a.
American Society for Mechanical Entry

b.
American Standards for Mechanical Engineers

c.
American Society for Mechanical Engineers

d.
American Society for Machine Engines

Feedback

Your answer is incorrect.

The correct answer is: American Society for Mechanical Engineers

Question **7**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

What is the full form of ASTM ?

Select one:
a.
American Society for Testing and Materials

b.
American Standards for Training and Materials

c.
American Standards for Testing and Materials

d.
American Society for Testing Machines

Feedback

Your answer is incorrect.

The correct answer is: American Society for Testing and Materials

Question **8**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the full form of UL ?

Select one:
a.
Underwriters Laboratories Inc.

b.
Union Labor Inc.

c.
Uniform Laboratories Inc.

d.
Union Laboratories Inc.

Feedback

Your answer is incorrect.

The correct answer is: Underwriters Laboratories Inc.

Your answer is partially correct.

You have correctly selected 4.
The correct answer is:
That portion of the combustion air that is supplied to the combustion zone in excess of that which is theoretically required for complete combustion. → Excess Air, The ambient air that is admitted to a venting system at the draft hood, draft diverter, or draft regulator. → Flue

Gas Dilution Air,
The air required for satisfactory combustion of gas including excess air. → Combustion Air, Acceptable to the authority having jurisdiction. → Approved, That portion of the combustion air that is supplied for the initial stages of the combustion process and is supplied upstream of the point of combustion → Primary Air, That portion of the combustion air that is supplied for the intermediate and final stages of the combustion process and is supplied downstream from the point of ignition → Secondary Air, Air that is admitted to a space containing an appliance to replace air exhausted through a ventilation opening or by means of exfiltration. → Ventilation Air, An appliance intended to supply hot liquid or vapor for space heating, processing, or power purposes → Boiler, That part of a piping or tubing system that conveys gas from the main piping or tubing or header to an appliance or appliances. → Branch Line, An appliance that operates with a non-positive vent static pressure with a flue loss not less than 17%. → Category 1 Appliance

Your answer is partially correct.

You have correctly selected 7.
The correct answer is: A primarily vertical shaft that encloses at least one flue for conducting flue gases outdoors → Chimney, A burner that is not equipped with a mechanical device for supplying combustion air. → Natural-Draft Burner, A burner in which the combustion air is supplied by a mechanical device such as a fan or blower at sufficient pressure to overcome the resistance of the burner and the appliance → Forced-Draft Burner, Constituents resulting from the combustion of gas with oxygen of the air and includes inert gases, but excludes excess air → Combustion Products,
Piping or tubing that, when in place in a wall, or ceiling of a finished building, is hidden from view and can only be exposed by use of a tool. It does not apply to piping or tubing that passes directly through a wall or partition. → Concealed Piping or Tubing, A draft control device intended to stabilize the natural draft in an appliance by admitting room air to the venting system. A double-acting draft regulator is one whose balancing damper is free to move in either direction. → Draft Regulator (Barometric Damper), A secondary structure (room) within or attached to a structure (building) in which an appliance(s) is installed. → Enclosure, A mechanical draft produced by a device upstream from the combustion zone of an appliance → Forced Draft,
A factory-fabricated flexible hose assembly and related fittings designed to convey gaseous fuel from a gas supply piping to the gas inlet to an appliance. → Gas Hose, A mechanical draft produced by a device downstream from the combustion zone of an appliance → Induced Draft

Your answer is partially correct.

You have correctly selected 5.

The correct answer is: That portion of an appliance designed for the attachment of a draft hood, vent connector, or venting system → Flue Collar,
A source of ignition which ceases to function after the trial-for-ignition period. → Interrupted Ignition, A heater which transfers heat from the source to the heated objects without heating the intervening air → Infrared Heater,
A pilot that burns without turn down throughout the entire time the burner is in service, whether the main burner is firing or not. → Continuous Pilot,
A pilot which is automatically lighted each time there is a call for heat and which is cut off automatically at the end of the trial-for-ignition of the main burner. → Interrupted Pilot, To replace the existing fluid (gaseous or liquid) in piping, tubing, equipment, a container or an appliance, with a desired fluid. → Purge,
A pilot which is automatically lighted each time there is a call for heat and burns during the entire period that the main burner is firing. → Intermittent Pilot, A flame that is used to ignite a gas/air or propane/air mixture at the main burner or burners. → Pilot,
Means a pilot flame supervised by a primary safety control which senses the presence of the pilot prior to gas being admitted to the main burner. → Proved Pilot, A source of ignition which continues to function during the entire period that the flame is present. → Intermittent Ignition

Your answer is partially correct.

You have correctly selected 5.
The correct answer is: A valve that automatically shuts off the supply of gas when de-energized by a combustion safety control, safety limit control or loss of activating medium. → Safety Shut-off Valve, That part of the venting system that conducts the flue gases from the flue collar of an appliance to a chimney or vent, and that may include a draft control device. → Vent Connector, The combination of valves, controls, piping and tubing, of an appliance upstream from the manifold, through which gas is supplied to the appliance and by which gas is controlled. → Valve Train,
A device, either adjustable or non-adjustable, for controlling and maintaining, within acceptable limits, a uniform outlet pressure. → Pressure Regulator, A system for the removal of flue gases to the outdoors by means of a chimney, vent connector, vent, or a natural or mechanical exhaust system. → Venting System, A pressure relief valve that is built into the body of the diaphragm assembly of a pressure regulator. → Internal Relief Valve, A regulator that is capable of maintaining a reduced outlet pressure when the fuel flow condition is static → Lock-up (Positive Shut-off) Regulator, A pressure regulator installed on a service line to control the pressure of the gas delivered to the customer. → Service Regulator, An automatic valve that has a closing time of less than 5 seconds upon being de-energized. → Fast-Closing Valve

Which Code governs the assembly or construction of an appliance subject to the authority having jurisdiction?

Select one:
a.
CSA B 149.3

b.
CSA B 149.2

c.
CSA B 149.4

d.
CSA B 149.1

Feedback

Your answer is incorrect.

B149.1 (4.2.3)

The correct answer is: CSA B 149.3

Question **2**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

An appliance, accessory, component, equipment or material used in an installation shall be of a type and rating ________________for the specific purpose for which it is employed.

Select one:
a.
appropriate

b.
approved

c.
sized

d.
fit

Feedback

Your answer is correct.

B149.1 (4.2.1)

The correct answer is: approved

Question **3**
Correct
Mark 1.0 out of 1.0

Flag question

Question text

When a new appliance, certified for high altitude, is installed above 4,500 feet, what is the required input rating reduction?

Select one:
a.
8 % for each additional 1,000 ft. (300 m)

b.
5 % for each additional 1,000 ft. (300 m)

c.
2 % for each additional 1,000 ft. (300 m)

d.
4 % for each additional 1,000 ft. (300 m)

Feedback

Your answer is correct.

B149.1 (4.22.1)

The correct answer is: 4 % for each additional 1,000 ft. (300 m)

Question **4**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

An appliance installed in a location where flammable vapor, combustible dust or fibers or an explosive mixture is present shall be:

Select one:
a.
Purged with nitrogen

b.
Wrapped in a fire proof coating

c.
Certified for installation in a hazardous location

d.
Sleeved

Feedback

Your answer is correct.

B.149.1 (4.9.2)

The correct answer is: Certified for installation in a hazardous location

Question **5**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

In a storage garage, an appliance shall be installed so that a component capable of igniting a flammable vapor is located not less than __________________ above the floor.

Select one:
a.
12 inches (300 mm)

b.
18 inches (450 mm)

c.
16 inches (400 mm)

d.
6 inches (150 mm)

Feedback

Your answer is correct.

B149.1 (4.16.2)

The correct answer is: 18 inches (450 mm)

Question **6**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

When a conflict exists between the manufacturers' certified installation instructions and the B 149**.**1 gas code, which method shall be used?

Select one:
a.
manufacturer

b.
common sense

c.

code

d.
home owner

Feedback

Your answer is incorrect.

B149.1 (4.1.4)

The correct answer is: code

Question **7**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

When an appliance is converted from the gas or fuel specified on the rating plate, the conversion shall be in accordance with:

Select one:
a.
The manufacturer’s certified instructions

b.
good engineering principles

c.
home owner's request

d.
gas fitter's experience

Feedback

Your answer is correct.

B149.1 (4.5.3)

The correct answer is: The manufacturer’s certified instructions

Question **8**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

Who determines if the installation of a used appliance is acceptable?

Select one:
a.
the certified installer

b.
the homeowner

c.
the gas inspector
d.
the manufacturer

Feedback

Your answer is incorrect.

B149.1 (4.5.6)

The correct answer is: the certified installer

Question **9**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

In a repair garage, an appliance shall be installed so that a component capable of igniting a flammable vapor is located not less than ________________ above the floor.

Select one:
a.
18 inches (450 mm)

b.
4.5 ft. (1400 mm)

c.
5 feet (1500 mm)

d.
36 inches (900 mm)

Feedback

Your answer is incorrect.

B149.1 (4.16.3)

The correct answer is: 4.5 ft. (1400 mm)

Question **10**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

When an appliance is installed in an area where physical damage may be incurred, what is required?

Select one:

a.
it shall be protected from such damage

b.
it shall not be installed in such a location
c.
it shall be in a framed mechanical room

d.
it shall be labeled and identified "Danger, Gas Appliance"

Feedback

Your answer is incorrect.

B149.1 (4.23)

The correct answer is: it shall be protected from such damage

Question **11**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

What shall be done to an appliance that has been converted from propane to natural gas?

a.
Purge the system with oxygen

b.
Mark the appliance rating plate with the change has been made

c.
Attach a tag on the gas meter

d.
Adjust the input

Feedback

Your answer is correct.

4.5

The correct answer is:

Mark the appliance rating plate with the change has been made

Question **12**

Incorrect

Mark 0.0 out of 1.0

Flag question

Question text

During the installation of a meter or a service regulator, the installer shall comply with which code?

a.
CSA Z.682

b.
CSA Z.240

c.
CSA Z.7396

d.
CSA Z.662

Feedback

Your answer is incorrect.

4.6

The correct answer is:
CSA Z.662

Question **13**

Incorrect

Mark 0.0 out of 1.0

Flag question

Question text

Which type of flashlight shall be used to check for gas leakage?

a.
Class 2 group B

b.
Class 2 group A

c.
Class 1 group A

d.
Class 1 group B

Feedback

Your answer is incorrect.

4.12

The correct answer is: Class 1 group A

Question **14**

Incorrect

Mark 0.0 out of 1.0

Flag question

Question text

Which type of protection is required to provide protection from a combustible material when the required clearance without protection is 34-inches, and the appliance is being installed in a location with only 21-inches on the side and back wall clearance from combustible material?

a.
28 Gauge Sheet Metal

b.
¼” Insulating Mill Board

c.
¼” Insulating Mill Board with Mineral Wool Batts

d.
22 Gauge Sheet Metal

Feedback

Your answer is incorrect.

Table 4.1

The correct answer is:
22 Gauge Sheet Metal

Question **15**

Correct

Mark 1.0 out of 1.0

Flag question

Question text

An access opening shall be provided to a space where an appliance is installed, and the opening shall be a minimum of:

a.
36" x 36"

b.

24" x 36"

c.
24" x 24"

d.
24" x 30"

Feedback

Your answer is correct.

4.14

The correct answer is:
24" x 30"

Question **16**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

Where an appliance is installed on a roof, the clearance between the edge of the roof shall be:

a.
8'

b.
4'

c.
5'

d.
6'

Feedback

Your answer is correct.

4.14

The correct answer is:
6'

Question **17**
Correct
Mark 1.0 out of 1.0

Flag question

Question text

An appliance with an FVIR system installed in a storage garage shall have a minimum clearance above the floor of:

a.
No Clearance Required

b.
3'

c.
4.5'

d.
1.5'

Feedback

Your answer is correct.

4.16

The correct answer is:
No Clearance Required

Question **18**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

What input shall an appliance certified for high-altitude installation be adjusted to, if the sea level rating is 120,000 BTUH and a high-altitude rating of 98,000 BTUH when installed at an elevation of 8,200 feet above sea level?

a.
72,675 BTUH

b.
86,204 BTUH

c.
79,398 BTUH

d.
82,320 BTUH

Feedback

Your answer is incorrect.

4.22

The correct answer is:
82,320 BTUH

Question **19**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

What is the maximum vapor pressure supplied into the piping or tubing system serving an appliance in a mobile home?

a.
13″ w.c.

b.
10″ w.c.

c.
7″ w.c.

d.
11″ w.c.

Feedback

Your answer is incorrect.

4.25

The correct answer is:
13″ w.c.

Question **20**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

A defective heat exchanger in a furnace installed in a dwelling unit shall be:

a.
Temporarily repaired

b.
Repaired

c.
Re-Calibrated

d.
Replaced

Feedback

Your answer is correct.

4.21

The correct answer is:
Replaced

Question **21**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

Who shall ensure that the gas piping or tubing system is gas-tight at the completion of the test?

a.
Field Safety Representative

b.
Gas Contactor

c.
Safety Officer

d.
Installer

Feedback

Your answer is correct.

4.3

The correct answer is:
Installer

Question **22**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

For the purpose of the B.149.1 which of the following gases does the code book not apply to?

a.
CH4

b.
C4H10

c.
C2H2

d.
C3H8

Feedback

Your answer is correct.

4.1

The correct answer is:
C2H2

Question **23**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

Unless a greater distance is indicated on the appliance rating plate, what is the minimum service clearance to any side, top, or bottom where service could be necessary?

a.
36"

b.
24"

c.
30"

d.
48"

Feedback

Your answer is correct.

4.14

The correct answer is:
24"

Question **24**
Incorrect
Mark 0.0 out of 1.0

Flag question

Question text

What type of gas valve shall be used for an automatic fire-extinguishing system protecting an exhaust system to ensure the gas supply to the appliance and the pilot is automatically shut off?

a.
Redundant Gas Valve

b.
Automatic Electrically Operated Fast-Closing

c.
Mechanical Electrical Fast-Closing Valve

d.
Automatic Seismic Valve

Feedback

Your answer is incorrect.

4.19

The correct answer is:
Automatic Electrically Operated Fast-Closing

Which of the following piping materials may not be used to run gas above ground.

Select one:
a.
Copper

b.
CSST

c.
Plastic

d.
Steel

Feedback

Your answer is correct.

B149.1 (6.2.16)

The correct answer is: Plastic

Question **2**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

The maximum gas (natural and propane) pressure allowance for threaded schedule 40 steel pipe is ______(_________).

Select one:

a.

350 (2400 Kpa)

b.

125 (860 kPa)

c.

Less than 250 (1725 kPa)

d.

no limit on steel pipe

Feedback

Your answer is incorrect.

B149.1 (6.2.3)

The correct answer is: 125 (860 kPa)

Question **3**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

The maximum allowable pressure drop on a low pressure system shall not exceed:

Select one:

a.

1 inch w.c. (250 Pa)

b.

.5 inch w.c. (125 Pa)

c.

2 inch w.c. (500Pa)

d.

1.5 inch w.c. (375 Pa)

Feedback

Your answer is incorrect.

B149.1 Table 6.1

The correct answer is: 1 inch w.c. (250 Pa)

Question **4**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Which of the following fittings are not included on tables A.16 and B.11 ?

Select one:
a.
couplings

b.
45's

c.
tees

d.
90's

Feedback

Your answer is incorrect.

B149.1 Tables A.16 and B.11

The correct answer is: couplings

Question **5**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the minimum size piping allowed to be installed in a concealed location?

Select one:
a.
0.25 inch NPS

b.
0.75 inch (NPS)

c.
0.5 inch NPS

d.
1.0 inch (NPS)

Feedback

Your answer is incorrect.

B149.1 (6.3.9)

The correct answer is: 0.5 inch NPS

Question **6**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What is the maximum spacing between supports for a horizontal 1 inch steel gas line?

Select one:
a.
15 feet (5m)

b.
6 feet (2m)

c.
8 feet (2.5m)

d.
10 feet (3m)

Feedback

Your answer is correct.

B149.1 (Table 6.2)

The correct answer is: 8 feet (2.5m)

Question **7**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What type of joints are ***not*** permitted in steel piping?

Select one:

a.
brazed

b.
threaded

c.
flanged

d.
press-connected

Feedback

Your answer is correct.

B149.1 (6.9.1)

The correct answer is: brazed

Question **8**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What is the maximum size gas piping that may be threaded?

Select one:
a.
2.0 inches

b.
1.5 inches

c.
2.5 inches

d.
1.25 inches

Feedback

Your answer is correct.

B149.1 (6.9.2)

The correct answer is: 2.0 inches

Question **9**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Which of the following statements is ***not*** true with regards to jointing sealant?

Select one:
a.
applied to male threads only

b.
first two starter threads must be left bare

c.
tape must be pink

d.
certified

Feedback

Your answer is correct.

B149.1 (6.9.6)

The correct answer is: tape must be pink

Question **10**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Which of the following is ***not*** an approved joint for copper gas piping?

Select one:
a.
brazed

b.
flared

c.
soldered

d.
press-connect

Feedback

Your answer is incorrect.

B149.1 (6.9.9)

The correct answer is: soldered

Question **11**

Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the minimum diameter of an underground gas line?

Select one:
a.
1/2 inch

b.
1 1/4 inches

c.
1 inch

d.
3/4 inch

Feedback

Your answer is incorrect.

B149.1 (6.15.1)

The correct answer is: 1/2 inch

Question **12**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the maximum length for a hose connection in a permanent installation?

Select one:
a.
10 feet (3 m)

b.
15 feet (4.6 m)

c.
30 feet (9.5 m)

d.
no maximum

Feedback

Your answer is incorrect.

B149.1 [6.20.3(a)]

The correct answer is: 10 feet (3 m)

Question **13**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the minimum diameter of test gauge that may be used in a pressure test on gas piping?

Select one:
a.
2 inches (50 mm)

b.
3 inches (75 mm)

c.
2.5 inches (63 mm)

d.
1.5 inches (38 mm)

Feedback

Your answer is incorrect.

B149.1 [6.22.2(b)]

The correct answer is: 3 inches (75 mm)

Question **14**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the required test pressure and duration for a 250 foot / 2 psi gas system?

Select one:
a.
50 psi / 180 min

b.
15 psi / 60 min

c.
50 psi / 60 min

d.
15 psi / 15 min

Feedback

Your answer is incorrect.

B149.1 (Table 6.3)

The correct answer is: 15 psi / 60 min

Question **15**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the maximum operating pressure for a "container supplied" propane system?

Select one:
a.
test on propane "container supplied" systems not required

b.
350 psi

c.
375 psi

d.
250 psi

Feedback

Your answer is incorrect.

B149.1 [Table 6.3 (footnote a)]

The correct answer is: 250 psi

Question **16**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Which of the following must accompany an underground plastic gas piping installation?

Select one:
a.
below ground shut-off valve / above ground tracing wire

b.
above ground shut-off valve / below ground tracing wire

c.
below ground tracing wire

d.
above ground shut-off valve

Feedback

Your answer is correct.

B149.1 (6.15.13 /14)

The correct answer is: above ground shut-off valve / below ground tracing wire

Question **17**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

How should piping/tubing laid underground be protected against corrosion?

Select one:
a.
good engineering practice or manufacturer's instructions

b.
electrical tape

c.
teflon coating

d.
waterproof paint

Feedback

Your answer is correct.

B149.1 (6.16.2)

The correct answer is: good engineering practice or manufacturer's instructions

Question **18**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Which of the following is ***not*** an acceptable shut-off for a high pressure gas system?

Select one:
a.
lubricated plug valve

b.
ball valve

c.
eccentric valve

d.
gate valve

Feedback

Your answer is incorrect.

B149.1 (6.18.4)

The correct answer is: gate valve

Question **19**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Which of the following is not a requirement for plastic tubing terminating above ground ?

Select one:
a.
Casing extends at least 6 inches below grade

b.
Plastic piping not subject to external stress

c.
Exposed piping painted yellow to a height of 18 inches

d.
Above ground portion is completely encased

Feedback

Your answer is incorrect.

B149.1 (6.2.19)

The correct answer is: Exposed piping painted yellow to a height of 18 inches

Question **20**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the maximum distance from the gas meter or line pressure regulator extension to existing system may be added without changing existing sizing ?

Select one:
a.
48 inches

b.
24 inches

c.
36 inches

d.
12 inches

Feedback

Your answer is incorrect.

B149.9 (6.6.2)

The correct answer is: 24 inches

Question **21**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Which of the following is a permissible location for gas piping ?

Select one:
a.
Heating duct

b.
Elevator shaft

c.
Chimney

d.
False ceiling space (T.bar ceiling)

Feedback

Your answer is correct.

B149.1 6.7.2 , 6.7.6

The correct answer is: False ceiling space (T.bar ceiling)

Question **22**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Which of the following is a permitted practice ?

Select one:

a.

Use of a close nipple

b.

Repairing a defective section of piping / tubing

c.

Using gas piping as an electrical ground

d.

1/2 inch welded joint

Feedback

Your answer is incorrect.

B149.1 (6.14 , 6.9.2)

The correct answer is: 1/2 inch welded joint

Question **23**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

How far must the unthreaded portion of a pipe nipple extend through a finished floor ?

Select one:

a.

2 inches

b.

1 inch

c.

1 1/2 inch

d.

1/2 inch

Feedback

Your answer is incorrect.

B149.1 (6.12.2)

The correct answer is: 2 inches

Question **24**

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Which of the following appliances does not require a dirt pocket ?

Select one:
a.
Clothes dryer

b.
water heater

c.
Boiler

d.
Furnace

Feedback

Your answer is correct.

B149.1 (6.13.1)

The correct answer is: Clothes dryer

Question **25**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What is the minimum length of a drip / dirt pocket ?

Select one:
a.
3 inches or diameter of pipe it serves , whichever is greater

b.
Equal to diameter of pipe it serves

c.
Equal to its length

d.
6 inches

Feedback

Your answer is correct.

B149.1 (6.13.2)

The correct answer is: 3 inches or diameter of pipe it serves , whichever is greater

Question **26**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the minimum depth of underground gas piping below a commercial drive way / parking lot ?

Select one:
a.
24 inch

b.
15 inch

c.
36 inch

d.
30 inch

Feedback

Your answer is incorrect.

B149.1 (6.15.4)

The correct answer is: 24 inch

Question **27**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

For identification of a gas *piping system* in a residential application. The maximum spacing of intervals along the entire length of the gas pipe shall not exceed:

Select one:
a.
6 Feet

b.
Must be completely yellow in a residential building

c.
Identification not required

d.

20 feet

Feedback

Your answer is incorrect.

B149.1 (6.17.3)

The correct answer is: Identification not required

Question **28**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Where is / are the shut off valves located when a gas line is connected between two buildings ?

Select one:
a.
At the point of exit of the first building and point of entry of the second

b.
At point of exit / entry of either building

c.
At point of exit / entry of building with largest gas input

d.
At the point of exit / entry of the system with largest diameter piping

Feedback

Your answer is correct.

B149.1 (6.18.8)

The correct answer is: At the point of exit of the first building and point of entry of the second

Question **29**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

How long must a test be maintained once the appliance is installed ?

Select one:
a.
30 minutes

b.

1 hour

c.
45 minutes

d.
10 minutes

Feedback

Your answer is incorrect.

B149.1 (6.22.3 (d)

The correct answer is: 10 minutes

Question **30**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Which of the following is acceptable support for horizontal rooftop gas piping / tubing ?

Select one:
a.
Untreated wooden blocks

b.
Support not required on rooftops

c.
Treated wooden blocks

d.
Unpainted steel riser champs

Feedback

Your answer is correct.

B149.1 (6.25.1)

The correct answer is: Treated wooden blocks

Question **31**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What types of fittings are required with steel pipe?

Select one:

a.
Malleable iron or steel and shall comply with ANSI/ASME B16.3

b.
Ductile iron complying with CSA B64.10

c.
Malleable iron or stainless steel and shall comply with ANSI/ASME B16.3

d.
Duriron and complying with AWWA B.149.5

Feedback

Your answer is correct.

6.2.2

The correct answer is: Malleable iron or steel and shall comply with ANSI/ASME B16.3

Question **32**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What is acceptable termination to a gas line outlet not yet connected to an appliance ?

Select one:
a.
Nothing as long as gas is off

b.
Cap, plug or plugged valve

c.
Plug valve

d.
Ball valve

Feedback

Your answer is correct.

B149.1 (6.12.1)

The correct answer is: Cap, plug or plugged valve

Question **33**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the minimum distance from the surface of a wall that contains a gas line before protection is not required ?

Select one:

a.
1.25 inches

b.
1.75 inches

c.
1.5 inches

d.
2 inches

Feedback

Your answer is incorrect.

B149.1 (6.16.4)

The correct answer is: 1.75 inches

Question **34**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What does CSST stand for ?

Select one:

a.
Corrugated Stainless Steel Tubing

b.
Computerized Structural Steel Tupperware

c.
Bradbury Steel Tubing

d.
Certified standard stainless tubing

e.
Coated Stainless steel tubing

Feedback

Your answer is correct.

B149.1 (6.2.8)

The correct answer is: Corrugated Stainless Steel Tubing

Question **35**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What type of copper is approved for gas ?

Select one:
a.
Type K

b.
Type G

c.
Type G , L or K

d.
Type L or K

Feedback

Your answer is correct.

B149.1 (6.2.4)

The correct answer is: Type G , L or K

Question **36**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What type of copper pipe is approved for underground gas installation ?

Select one:
a.
Externally coated Type G

b.
Type K

c.
Type K and externally coated L or G

d.
Any type as long as it's painted

Feedback

Your answer is incorrect.

B149.1 (6.2.8.)

The correct answer is: Type K and externally coated L or G

Question **37**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is the minimum size piping that may be concealed ?

Select one:
a.
NPS 1/4 inch

b.
NPS 3/4 inch

c.
NPS 3/8 inch

d.
NPS 1/2 inch

Feedback

Your answer is incorrect.

B149.1 (6.3.9)

The correct answer is: NPS 1/2 inch

Question **38**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Which of the following is an acceptable fitting for a gas system ?

Select one:
a.
1 inch street 90

b.
1 inch x 3/4 inch steel bushing

c.
1 inch x 3/4 inch malleable busing

d.
3/4 inch close nipple

Feedback

Your answer is incorrect.

B149.1

The correct answer is: 1 inch x 3/4 inch steel bushing

How much Methane does Natural gas contain as a percentage (%) ?

Select one:
a.
80 to 95 %

b.
50 to 60%

c.
100%

d.
60 to 70 %

Feedback

Your answer is correct.

The correct answer is: 80 to 95 %

Question **2**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Is natural gas a toxic gas? (type yes or no) Answer

Feedback

The correct answer is: No

Question **3**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

For the following questions you can type in the chemical formulas as follows (eg water = H2o) do not include spaces in your answers.

List the chemical formula for Natural Gas. Answer

Feedback

The correct answer is: CH4

Question **4**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

List the chemical formula for Propane. Answer

Feedback

The correct answer is: C3H8

Question **5**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

List the chemical formula for Butane. Answer

Feedback

The correct answer is: C4H10

Question **6**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

List the chemical formula for Carbon monoxide. Answer

Feedback

The correct answer is: CO

Question **7**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

List the chemical formula for Carbon dioxide. Answer

Feedback

The correct answer is: CO2

Question **8**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

List the chemical formula for Methane. Answer

Feedback

The correct answer is: CH_4

Question **9**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

List the chemical formula for Oxygen. Answer

Feedback

The correct answer is: O_2

Question **10**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

The ratio of the weight of a given volume of gas to the weight of an equal volume of air measured at standard temperature and pressure (60ºF @ 14.73 Psi or 15ºC @ 101.325 kPa). This is a description of...

Select one:

a.
Relative Volume

b.
Relative Density

c.
Weight of a substance compared to the density of Hg

d.
Relative Heat

Feedback

Your answer is incorrect.

The correct answer is: Relative Density

Question **11**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

The total heat energy produced when a given volume of fuel is subjected to combustion.

Select one:

a.
Calorific Capacity

b.
Combustion Capacity

c.
Heating Value

d.
Specific Heat

Feedback

Your answer is incorrect.

The correct answer is: Heating Value

Question **12**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

When one cubic foot of natural gas is burned it will produce Answer British Thermal Units.

Feedback

The correct answer is: 1000

Question **13**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Having any lesser amount of fuel than the lower flammable limit, a mixture would be Answer and would not burn.

Feedback

The correct answer is: lean

Question **14**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Which of the following is used to odourize natural gas?

Select one:
a.
Mercaptan

b.
Sulphur

c.
Citric Acid

d.
Onion Oil

Feedback

Your answer is correct.

The correct answer is: Mercaptan

Question **15**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Natural gas must be readily detectable when ________ of the fuel gas per volume is present.

Select one:
a.
less than 1%

b.
any amount

c.
more than 10%

d.
less than 10%

Feedback

Your answer is incorrect.

The correct answer is: less than 1%

Question **16**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

At standard atmospheric pressure, 14.73 Psi (101.325 kPa), the boiling point of propane is Answer. Answer in Fahrenheit as ###F (including the letter "F") .

Feedback

-44 F

or

-42 C

The correct answer is: -44F

Question **17**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Fuel gases are usually transported and stored in liquid state rather than as a gas due to the following:

(C3H8) 270 times more fuel can be stored in the same space.

(C4H10) 235 times more fuel can be stored in the same space.

Select one:
True
False

Feedback

The correct answer is 'True'.

Question **18**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

The limits of flammability of propane gas in air are approximately:

Select one:
a.
10% to 45%

b.
5% to 15.3%

c.
2.5% to 9.5%

d.
4.6% to 14%

Feedback

Your answer is correct.

The correct answer is: 2.5% to 9.5%

Question **19**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Identify the limits of flammability for natural gas in air:

Select one:
a.
4% to 14%

b.
6% to 12%

c.
4% to 10%

d.
14% to 24%

Feedback

Your answer is incorrect.

The correct answer is: 4% to 14%

Question **20**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Natural gas is composed mainly of:

Select one:
a.
butane

b.
carbon dioxide

c.
methane

d.
propane

Feedback

Your answer is correct.

The correct answer is: methane

Question **21**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

The relative density of propane vapour is approximately:

Select one:
a.
1.5

b.
2.0

c.
0.6

d.
0.8

Feedback

Your answer is incorrect.

The correct answer is: 1.5

Question **22**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What is the calorific value of Butane gas?

Select one:
a.
1,200Btu/Ft.$_3$(.352kW/Ft.$_3$)$1,200 Btu/Ft.3(.352 kW/Ft.3)$
b.
1,050Btu/Ft.$_3$(.308kW/Ft.$_3$)$1,050 Btu/Ft.3(.308 kW/Ft.3)$
c.
3,200Btu/Ft.$_3$(.938kW/Ft.$_3$)$3,200 Btu/Ft.3(.938 kW/Ft.3)$
d.

$2{,}500\mathrm{Btu}/\mathrm{Ft.}^3(.733\mathrm{kW}/\mathrm{Ft.}^3)$$2{,}500 Btu/Ft.3(.733 kW/Ft.3)$

Feedback

Your answer is correct.

The correct answer is: $3{,}200\mathrm{Btu}/\mathrm{Ft.}^3(.938\mathrm{kW}/\mathrm{Ft.}^3)$$3{,}200 Btu/Ft.3(.938 kW/Ft.3)$

Question **23**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

The heat generated by the complete combustion of a unit of fuel is commonly referred to as its:

Select one:
a.
combustion value

b.
distillation value

c.
calorific value

d.
flash value

Feedback

Your answer is correct.

The correct answer is: calorific value

Question **24**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

Which of the following gases has the highest calorific value?

Select one:
a.
Carbon monoxide

b.
Natural Gas

c.

Butane

d.
Propane

Feedback
Your answer is correct.

The correct answer is: Butane

Question **25**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text
Natural gas must be preheated to approximately _______ ºF before it will ignite.

Select one:
a.
1,200

b.
212

c.
3,500

d.
1,000

Feedback
Your answer is incorrect.

The correct answer is: 1,200

Question **26**
Correct
Mark 1.00 out of 1.00
Flag question

Question text
The flame temperature of natural gas is approximately _______ ºF.

Select one:
a.
1,000

b.
212

c.

3,500

d.
1,200

Feedback

Your answer is correct.

The correct answer is: 3,500

Question **27**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

The calorific value (heat value) of natural gas is approximately:

Select one:
a.
$500\mathrm{Btu/Ft.}_{3}(5.17\mathrm{kW/m}_{3})$$500Btu/Ft.3(5.17kW/m3)$
b.
$3{,}200\mathrm{Btu/Ft.}_{3}(33\mathrm{kW/m}_{3})$$3{,}200Btu/Ft.3(33kW/m3)$
c.
$2{,}500\mathrm{Btu/Ft.}_{3}(26\mathrm{kW/m}_{3})$$2{,}500Btu/Ft.3(26kW/m3)$
d.
$1{,}000\mathrm{Btu/Ft.}_{3}(10.35\mathrm{kW/m}_{3})$$1{,}000Btu/Ft.3(10.35kW/m3)$

Feedback

Your answer is correct.

The correct answer is: $1{,}000\mathrm{Btu/Ft.}_{3}(10.35\mathrm{kW/m}_{3})$$1{,}000Btu/Ft.3(10.35kW/m3)$

Question **28**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

The specific gravity of a gas is the:

Select one:
a.
weight of a gas as compared to an equal volume of water

b.
heat in the gas

c.

weight of a gas as compared to an equal volume of air

d.
volume of the gas

Feedback

Your answer is correct.

The correct answer is: weight of a gas as compared to an equal volume of air

The major interruption in fuel supply could stop production and result in what?

Select one:
a.
Major economic losses

b.
Not a big deal

c.
Inconvenience

d.
Minor economic losses

Feedback

Your answer is correct.

The correct answer is: Major economic losses

Question **2**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

When is it practical to consider Bio-gas as a supplemental fuel source?

Select one:
a.
When supply exceeds demand

b.
When demand exceeds supply

c.
It is never practical

d.
Bio-gas is hazardous and should never be used

Feedback

Your answer is correct.

The correct answer is: When demand exceeds supply

Question **3**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

When organic waste degrades what does it produce?

Select one:
a.
Water

b.
Energy

c.
Carbon Dioxide

d.
Methane

Feedback

Your answer is correct.

The correct answer is: Methane

Question **4**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

What is the process of bacteria digesting organic material referred to as?

Select one:
a.
Energetic activity

b.
Process Digestion

c.
Anaerobic digestion

d.
Aerobic activity

Feedback

Your answer is correct.

The correct answer is: Anaerobic digestion

Question **5**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

What is term used to describe separating methane from the bio-gas?

Select one:

a.
Sweeping

b.
Bleaching

c.
Scrubbing

d.
Manufacturing

Feedback

Your answer is incorrect.

The correct answer is: Scrubbing

Question **6**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Calculate the calorific value of a propane/air mixture with 65% propane.

Select one:

a.
1 500 Btu/cubic foot

b.
1 235 Btu/cubic foot

c.
1 750 Btu/cubic foot

d.
1 625 Btu/cubic foot

Feedback

Your answer is incorrect.

The correct answer is: 1 625 Btu/cubic foot

Question **7**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

Calculate the specific gravity of a propane/air mixture with 65% propane.

Select one:
a.
1.765

b.
1.342

c.
1.338

d.
1.182

Feedback

Your answer is incorrect.

(65/100 x 1.52) + (35/100 x 1) = 1.338

The correct answer is: 1.338

TANK

Your answer is correct.

The correct answer is:
The type of container usually considered portable would be a [Cylinder].

A 20lb propane cylinder would hold Answer pounds of liquid propane.

Feedback

The correct answer is: 20

The density of liquid propane is Answer lbs / cubic foot.

Feedback

The correct answer is: 31.8

Question text

The TareTankCylinderLiquid weight of a cylinder is the weight of an empty cylinder with valve.

Feedback

Your answer is incorrect.

The correct answer is:
The [Tare] weight of a cylinder is the weight of an empty cylinder with valve.

Question text

The PressureOxygenVolumeGas in a propane cylinder will vary widely with ambient temperature.

Feedback

Your answer is incorrect.

The correct answer is: The [Pressure] in a propane cylinder will vary widely with ambient temperature.

Flag question

Question text

The pressure relief valve setting on a propane cylinder is typically Answer psig.

Feedback

The correct answer is: 375

Question text

The maximum permitted fill level of a propane cylinder Answer percent.

Feedback

The correct answer is: 80

Question text

At atmospheric pressure , propane is found in what physical state ? GasSolidLiquidVapour

Feedback

Your answer is correct.

The correct answer is:
At atmospheric pressure , propane is found in what physical state ? [Gas]

Question text

Vaporization of gas creates a natural _____________ effect.

Select one:
a.

Vapourization

b.
Condensing

c.
Heating

d.
Refrigeration

Feedback

Your answer is incorrect.

The correct answer is: Refrigeration

What name is given to the connection that is utilized for vapor service applications ?

Select one:
a.
P.O.L

b.
M.V.P

c.
C.S.A

d.
L.O.P

Feedback

Your answer is correct.

The correct answer is: P.O.L

Question text

The WettedDrySurfaceSuperficial area of a container is the specific area that comes into contact with the LP gas liquid.

Feedback

Your answer is incorrect.

The correct answer is:
The [Wetted] area of a container is the specific area that comes into contact with the LP gas liquid.

The greater the wetter area the greater the LiquidDrySurfaceSuperficial vaporization rate.

Feedback

Your answer is incorrect.

The correct answer is:
The greater the wetter area the greater the [Liquid] vaporization rate.

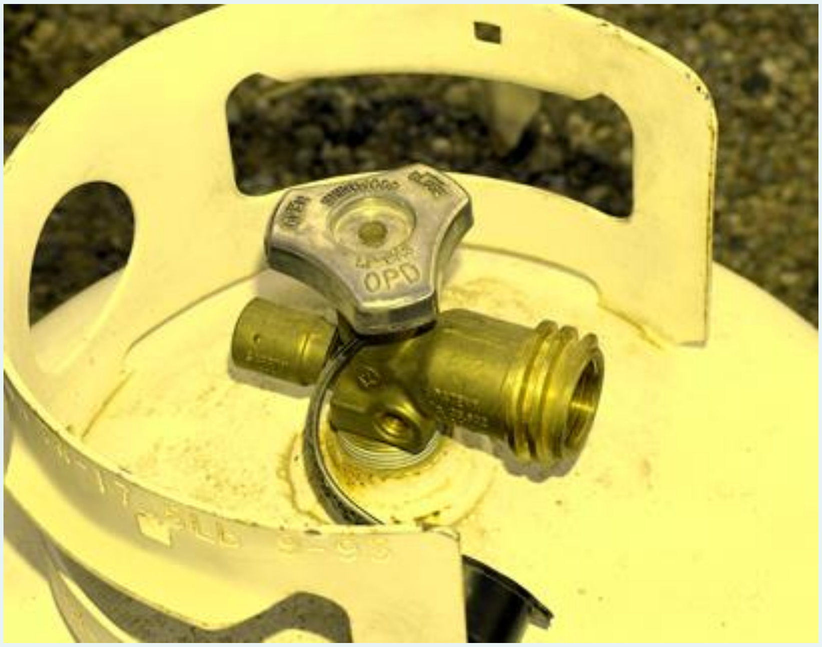
Question text

The largest portable LP gas container would be a Answer pound cylinder.

Feedback

The correct answer is: 500

The drawing below is of a propane:



Select one:
a.
valve with overfill protection device

b.
liquid withdrawal valve for a forklift

c.
cylinder liquid withdrawal valve

d.
evacuation valve for large tanks

Feedback

Your answer is correct.

The correct answer is: valve with overfill protection device

Question text

The smallest size cylinder, known as a disposable type, is:

Select one:
a.
1 pound

b.
10 pounds

c.
5 pounds

d.
20 pounds

Feedback

Your answer is incorrect.

The correct answer is: 1 pound

Question text

What is the sum of all whole numbers from 1 to infinity? $\sum \mathrm{n}=1\downarrow,\infty\uparrow\sum n=1\downarrow,\infty\uparrow$

Select one:
a.
∞

b.
-1/12

c.
Cannot be determined

d.
0

Feedback

Your answer is incorrect.

find the proof here if you're curious :

https://www.youtube.com/watch?v=w-I6XTVZXww

The correct answer is: -1/12

Question text

The largest size cylinder is:

Select one:

a.
1,000 pounds
b.
250 pounds
c.
100 pounds
d.
500 pounds

Feedback

Your answer is incorrect.

The correct answer is: 500 pounds

Question text

Liquid propane capacity is listed on tanks in:

Select one:
a.
pounds for small tanks and gallons for big tanks

b.
pounds of propane

c.
pounds or gallons of propane on all tanks

d.
gallons of water capacity

Feedback

Your answer is incorrect.

The correct answer is: gallons of water capacity

Question text

The type of thread connection found on the outlet of a vapour service valve is:

Select one:
a.
POL

b.
NPS

c.
NPT

d.
BSPT

Feedback

Your answer is correct.

The correct answer is: POL

The relief valve start-to-discharge pressure for a cylinder is:

Select one:
a.
375 Psig

b.
312 Psig

c.
420 Psig

d.
250 Psig

Feedback

Your answer is correct.

The correct answer is: 375 Psig

A data plate with construction information is found attached to:

Select one:
a.
cylinders

b.
tanks

c.
cylinders over 420 pounds capacity

d.
cylinders and tanks

Feedback

Your answer is incorrect.

The correct answer is: tanks

Question text

When calculating the *effective load* that an appliance will place on a propane container, which formula should be used?

Select one:
a.

Effective load = weight of propane X load factor

b.
Effective load = Btu/H of input

c.
Effective load = gallons of liquid propane X 91,500
d.
Effective load = input X load factor

Feedback

Your answer is correct.

The correct answer is: Effective load = input X load factor

Calculate the effective load on a propane container supplying a 100,000 Btu/h central heating furnace: Answer Btuh

Feedback

100,000 Btuh x 0.5 = 50,000 Btuh

The correct answer is: 50000

Question text

Calculate the effective load on a propane storage container for a 50,000 Btu/h construction heater: Answer Btu

Feedback

50,000 Btuh x 1 = 50,000 Btu

The correct answer is: 50000

Question **12**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

A propane-fired furnace at 100,000 Btu/h and hot water tank at 40,000 Btu/h are connected to an above ground storage tank. If the lowest winter temperature in the area is 10ºF, calculate the size of the propane storage tank required at 75% humidity: Answer Gal. Tank

Feedback

Furnace 100,000 Btuh x 0.5 = 50,000 Btuh

Hot Water Tank 40,0000 Btuh x 0.16 = 6,400 Btuh

Total = 56,400 Btuh

56,400 Btuh @ 10ºF and 80% Humidity = 1,000 Gal. Tank

The correct answer is: 1000

180 Feet of 6 Inch pipe is to be pressure tested to 100 Psig with Nitrogen.
How many 2 Ft3 Nitrogen cylinders at 2200 Psig would be required to perform this test.

(V1P1T2=V2P2T1)

Select one:
a.
1

b.
4

c.
2

d.
3

Feedback

Your answer is incorrect.

PIPE: D2 x .7854 x L=   -   6"/12"= .5Ft.   - (.5x .5) x .7854 x 180= 35.343 Ft.3

Each Cylinder at 0 Psig (14.73 Psia)   P1 x V1 / P2 = V2

P1= 2200+14.73

V1= 2 Ft3

P2= 0+14.73

V2= ?

V2= 300Ft.3   (300.7)

P1 x V1 / V2 = P2

P1= 0+14.73

V1= 300 Ft3 +35.343 Ft3

P2= ?

V2= 2Ft3 + 35.343 Ft3

P2= 132.276 Psia   (117.547 Psig)

1 Bottle

The correct answer is: 1

Question **2**

Not answered

Marked out of 1.00

Flag question

Question text

In reference to the previous question.

180 Feet of 6 Inch pipe is to be pressure tested to 100 Psig with Nitrogen.

By how much is the required test pressure exceeded if the entire content of the cylinder is introduced to the pipe?

Select one:

a.
132.276 Psia / 117.547 Psig

b.
23.276 Psia / 11.547 Psig

c.
32.276 Psia / 17.547 Psig

d.
14.73 Psia / 0 Psig

Feedback

Your answer is incorrect.

132.276 Psia / 117.547 Psig

The correct answer is: 32.276 Psia / 17.547 Psig

What type of piping materials require cathodic protection ?

Select one:

a.
Plastic

b.
Steel

c.
Composite

d.
Glass

Feedback

Your answer is correct.

The correct answer is: Steel

What things are necessary for corrosion to occur ?

Select one or more:
a.
Anode

b.
Metallic Path

c.
Bonding wire

d.
Electrolyte

e.
Conductor

f.
Cathode

Feedback

Your answer is correct.

The correct answers are: Anode, Cathode, Electrolyte, Metallic Path

Question text

What is considered the cathode in a cathodically protected system ?

Select one:
a.
The pipe

b.
The magnesium

c.
The wire

Feedback

Your answer is incorrect.

The correct answer is: The pipe

Question text

If damage to the protective coating on piping occurs , what material is acceptable to use for repairs ?

Select one:

a.
Polyken Tape

b.
Duct tape

c.
Magnesium Solder

Feedback

Your answer is incorrect.

The correct answer is: Polyken Tape

Question text

What are the names for the test that is required to check for defects in the pipe coating ?

Select one or more:
a.
Road Test

b.
Beep test

c.
Jeep test

d.
Holiday test

Feedback

Your answer is partially correct.

You have correctly selected 1.
The correct answers are: Jeep test, Holiday test

Question text

Sacrificial anodes must be placed 23 feet horizontally and 32 feet vertically beside the protected pipe.

Feedback

Your answer is correct.

The correct answer is:
Sacrificial anodes must be placed [2] feet horizontally and [3] feet vertically beside the protected pipe.

What is the required test pressure of a welded , factory coated installation ?

Answer

PSIG for Answer

min.

For the purpose of Clause 5.5.4, a space shall be considered to be ventilated space where the accumulation of gas in the space does not exceed the lower explosion limit of the gas by:

Select one:
a.
25%

b.
5%

c.
15%

d.
10%

Feedback

Your answer is incorrect.

The correct answer is: 25%

Question text

A line pressure regulator requires a manual shut off valve. Where is it to be installed?

Select one:
a.
Downstream of the regulator

b.
Upstream of the regulator

c.
Upstream of the gas meter

d.
Downstream of the drip leg before the appliance

Feedback

Your answer is incorrect.

(5.2.1.5(a))

The correct answer is: Upstream of the regulator

Question text

A propane line pressure regulator installed within a one or two family dwelling or row housing shall not be installed more than:

Select one:
a.
3 ft (900 mm) from the main regulator (off the tank)

b.
3 ft. (900 mm) from the point where the propane supply enters the building
c.
As close as possible to the appliance regulator

d.
A line pressure regulator is not required on a domestic propane system.

Feedback

Your answer is correct.

(5.1.4)

The correct answer is: 3 ft. (900 mm) from the point where the propane supply enters the building

Question text

When four 1 1/4-inch overpressure relief valves are installed and connected to a single vent line, the single vent line shall have a minimum diameter of:

Select one:
a.
3-inch

b.
1 1/4-inch

c.
2-inch
d.
1 1/2-inch

Feedback

Your answer is incorrect.

The correct answer is: 2-inch

Question **5**

Partially correct

Mark 0.33 out of 1.00

Flag question

Question text

State the maximum gas pressures permitted inside buildings:

One and two family dwellings not containing central boilers or mechanical rooms	Answer 1Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Hotels and motels not containing central boilers or mechanical rooms.	Answer 2Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Residential, other than one and two family dwellings with a central boiler or mechanical room	Answer 3Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Care or detention and assembly buildings not containing central boilers or mechanical rooms.	Answer 4Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Commercial buildings other than central boiler or mechanical room.	Answer 5Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Residential, other than one and two family dwellings not containing central boilers or mechanical rooms	Answer 6Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Commercial buildings with a central boiler or mechanical room	Answer 7Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Industrial buildings using propane and with a central boiler or mechanical room.	Answer 8Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Care or detention and assembly buildings with a central boiler or mechanical room.	Answer 9Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Industrial buildings using propane or natural gas not containing central boilers or mechanical rooms.	Answer 10Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Central heating plants with a central boiler or mechanical room.	Answer 11Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)
Building under construction using propane construction heaters.	Answer 12Choose...25 (175)Natural Gas 66 (450) / Propane 20 (140)20 (140)5 (35)2 (14)

Feedback

Your answer is partially correct.

You have correctly selected 4.
The correct answer is: One and two family dwellings not containing central boilers or mechanical rooms → 2 (14), Hotels and motels not containing central boilers or mechanical rooms. → 5 (35), Residential, other than one and two family dwellings with a central boiler or mechanical room → 20 (140), Care or detention and assembly buildings not containing central boilers or mechanical rooms. → 5 (35), Commercial buildings other than central boiler or mechanical room. → 20 (140), Residential, other than one and two family dwellings not containing central boilers or mechanical rooms → 5 (35), Commercial buildings with a central boiler or mechanical room → 20 (140), Industrial buildings using propane and with a central boiler or mechanical room. → 20 (140), Care or detention and assembly buildings with a central boiler or mechanical room. → 20 (140), Industrial buildings using propane or natural gas not containing central boilers or mechanical rooms. → Natural Gas 66 (450) / Propane 20 (140), Central heating plants with a central boiler or mechanical room. → Natural Gas 66 (450) / Propane 20 (140), Building under construction using propane construction heaters. → 25 (175)

Question text

What is the minimum distance the discharge from relief devices shall terminate from a mechanical intake ?

Select one:
a.
10 feet (3 m)

b.
3 feet (1 m)

c.
1 foot (300 mm)

d.
5 feet (1500 mm)

Feedback

Your answer is correct.

Table 5.3

The correct answer is: 10 feet (3 m)

Question text

If a line pressure regulator is certified to CSA 6.22 an over pressure protection device is not required, as long as the inlet pressure is:

Select one:
a.

2 psig or less

b.
5 psig or less
c.
Overpressure protection is required

d.
14" w.c. or less

Feedback

Your answer is incorrect.

5.3.2

The correct answer is: 2 psig or less

Question text

What size would the common vent be, for a 3 regulators without internal relief that have 3/4"vents?

Select one:
a.
1 3/4"

b.
2"

c.
1"

d.
1 1/4"

Feedback

Your answer is incorrect.

Clause 5.5.3.

($.75^2$x .7854)x 3 = 1.32536

1.32536/.7854−−−−−−−−−−−√=1.32536/.7854=
1.299 inch

Since it is greater than 1.25 we must go with 1.5

1 1/2"

The correct answer is: 2"

State the minimum height of a vent or chimney above the highest connected appliance draft hood outlet or flue collar:

Select one:
a.
5 feet (1.5 m)

b.
3 Feet (750mm)
c.
2 Feet (600mm)

d.
1 Foot (300mm)

Feedback

Your answer is incorrect.

8.14.6

The correct answer is: 5 feet (1.5 m)

Question text

What is the minimum internal dimension of a vent?

Select one:
a.
4 inch (100 mm)

b.
No minimum as per B-149.1

c.
2 inch (50 mm)

d.
3 inch (75 mm)

Feedback

Your answer is incorrect.

8.13.3

The correct answer is: 2 inch (50 mm)

Question text

What is the minimum diameter of a vent ?

Select one:
a.
No minimum as per B-149.1

b.
5 inch (125mm)

c.
3 inch (75 mm)

d.
4 inch (100 mm)

Feedback

Your answer is incorrect.

8.13.3

The correct answer is: 3 inch (75 mm)

Question text

The flue gas discharge opening for an outdoor swimming pool heater shall not terminate less than __________from any _______________.

Select one:
a.
3.5 feet (1 m) / building opening

b.
3.5 feet (1 m) / pool edge

c.
10 feet (3 m) / pool edge

d.
10 feet (3 m) / building opening

Feedback

Your answer is incorrect.

8.14.10

The correct answer is: 10 feet (3 m) / building opening

Question text

When two or more vent connectors enter a common vent or chimney, which connector must enter at the highest level?

Select one:
a.
The shortest vent connector

b.
The smallest vent connector

c.
Any vent connector regardless of input or size

d.
The largest vent connector

Feedback

Your answer is incorrect.

8.16.1

The correct answer is: The smallest vent connector

Question text

How is a vent connector connected to a chimney so that the connector can be removed for cleaning?

Select one:
a.
With a quick connect fitting

b.
Cannot connect a vent connector to a chimney.

c.
By the use of a sleeve

d.
A "snap=lock" joint

Feedback

Your answer is incorrect.

8.19.3

The correct answer is: By the use of a sleeve

Question text

What table describes the types of venting systems to be used?

Select one:
a.
Table 8.3

b.
Table 8.6

c.
Table 8.4

d.
Table 8.5

Feedback

Your answer is incorrect.

8.10.3

The correct answer is: Table 8.5

Question text

What is the minimum height above the outside grade level for an air supply inlet opening from outdoors?

Select one:
a.
24 inches (600 mm)

b.
No minimum as per B-149.1

c.
12 inches (300 mm)

d.
6 inches (150 mm)

Feedback

Your answer is incorrect.

Gas Safety Regulations; Schedule 8.3.6

The correct answer is: 24 inches (600 mm)

Question text

What is the purpose of an air flow sensing device when the air supply is provided by mechanical means?

Select one:
a.
To make sure the air is warm enough to support combustion

b.
To make sure there is enough air to support combustion

c.
To make sure the air is cool enough to support combustion

d.
To shut off the gas in the event of air-supply failure.

Feedback

Your answer is incorrect.

8.8.1

The correct answer is: To shut off the gas in the event of air-supply failure.

Question text

An air supply inlet opening from the outdoors shall be equipped with a means to prevent the direct entry of _______ and _______.

Select one:
a.
Rain / wind

b.
Rats / mice

c.
Intruders / animals

d.
Sleet / snow

Feedback

Your answer is incorrect.

8.3.5

The correct answer is: Rain / wind

Question text

If a vent connector of other than Type “B” vent must pass through a combustible wall, what device is required to provide proper clearance?

Select one:
a.
Single wall vent connector is approved for side wall penetration without additional spacing requirement

b.
A ventilated metal thimble

c.
Cannot use anything other than B-vent through a combustible wall or partition

d.
Type 3M fire stopping spacer for gas venting materials

Feedback

Your answer is incorrect.

8.18.12

The correct answer is: A ventilated metal thimble

Flag question

Question text

State two methods of attaching a vent connector to a draft hood outlet or flue collar:

Select one:
a.
Sheet metal screws / Mechanical fasteners

b.
Approved adhesive for metal / Brazing with minimum B-cup 5 brazing rod

c.
Metallic tape / Restraining clamps

d.
Mechanical joint couplings / Gear clamps

Feedback

Your answer is incorrect.

8.18.15

The correct answer is: Sheet metal screws / Mechanical fasteners

Question text

Section 8 of the CAN/CSA B-149.1 gas code deals with _____________and ___________for appliances.

Select one:
a.
B-Venting / C-Venting

b.
Fuel / Air Supply Systems

c.
Venting systems / Air Supply

d.
Category I / Category II Venting Systems

Feedback

Your answer is incorrect.

The correct answer is: Venting systems / Air Supply

Question text

Interference with the air supply for an appliance shall be prohibited:

Select one:
True
False

Feedback

8.1.3

The correct answer is 'True'.

Question text

Manually operated dampers or manually adjustable louvers are permitted.

Select one:
True
False

Feedback

8.5.3

The correct answer is 'False'.

Question text

Square or rectangular-shaped duct shall only be used when the required free area of the air-supply opening is equal to or greater than ___in squared.

Select one:
a.
18

b.
9

c.
6

d.
3

Feedback

Your answer is incorrect.

The correct answer is: 9

Question text

A power venter certified for use as an add-on to a water heater may be used on a water heater that has an input equal to or less than:

Select one:
a.
50 KW

b.
30 KW

c.
15 KW

d.
120 KW

Feedback

Your answer is incorrect.

The correct answer is: 15 KW

Flag question

Question text

A moisture-exhaust duct is considered to interfere with the combustion air intake when located within how many feet of the air intake?

Select one:
a.
5 feet

b.
3 feet

c.
10 feet

d.
6 feet

Feedback

Your answer is incorrect.

8.3.7

The correct answer is: 3 feet

Question text

A vent pipe shall not terminate above grade level less than:

Select one:
a.
450 mm

b.
300 mm

c.
600 mm

d.
150 mm

Feedback

Your answer is incorrect.

The correct answer is: 300 mm

Question text

A special venting system used with a positive vent stack pressure shall extend passing through a roof at least:

Select one:
a.
24"

b.
30"

c.
18"

d.
36"

Feedback

Your answer is incorrect.

The correct answer is: 18"

Question text

Apertures in a fixed louver grille or screen shall have a no dimension smaller than:

Select one:
a.
12mm

b.
18mm

c.

6mm

d.
25mm

Feedback
Your answer is incorrect.

The correct answer is: 6mm

Vents constructed using plastic piping shall be certified to :

Select one:
a.
ULC 637

b.
ULC 636

c.
ULC 315

d.
ULC 609

Feedback
Your answer is incorrect.

The correct answer is: ULC 636

Question text
What is the minimum gauge thickness that shall be used on a vent connected to an outdoor incinerator?

Select one:
a.
22 GSG

b.
26 GSG

c.
20 GSG

d.
24 GSG

Feedback
Your answer is incorrect.

The correct answer is: 20 GSG

Question text

What type of venting shall be used on a certified gas-and-oil burning appliance?

Select one:
a.
Type B

b.
Type A

c.
Type L

d.
Type BW

Feedback

Your answer is incorrect.

The correct answer is: Type L

A vent may be any shape provided that its venting capacity is equal to the capacity of the round pipe for which it's substituted for, and its minimum internal dimension is not less than ___inches:

Select one:
a.
4

b.
9

c.
2

d.
3

Feedback

Your answer is incorrect.

The correct answer is: 2

Question text

The Type of venting system that should be used for a decorative appliance venting into a fireplace:

Select one:
a.
Chimney

b.
B Vent

c.
BH Vent

d.
C Vent

Feedback

Your answer is incorrect.

The correct answer is: Chimney

Question text

If joints and seams are sealed, vents or vent connectors may be installed in:

Select one:
a.
The duct used for return air

b.
The space used to convey return air.

c.
The shaft used for ventilation air

d.
The space used to convey cold air

Feedback

Your answer is incorrect.

The correct answer is: The space used to convey return air.

Question text

When a single wall vent is connected directly to the flue outlet of the appliance that it serves, the length does not exceed _____ inches before connecting to a double-wall to a single-wall adaptor?

Select one:
a.
18

b.
Single wall vents are not permitted to connect a flue outlet

c.
24

d.

12

Feedback

Your answer is incorrect.

The correct answer is: 18

Question text

Which of the following statements is correct?

Select one:

a.
Type B vent may be used in lieu of BH vent.

b.
Type L vent may be used in lieu of B vent.

c.
Type B vent may be used in lieu of A vent.

d.
Type B vent may be used in lieu of L vent.

Feedback

Your answer is incorrect.

The correct answer is: Type L vent may be used in lieu of B vent.

Question text

In a residential appliance certified to operate with an automatic vent damper, it shall be connected to a B Vent complying with:

Select one:

a.
ULC S618

b.
ULC S605

c.
ULC S609

d.
ULC S603

Feedback

Your answer is incorrect.

The correct answer is: ULC S605

Question text

How far must a vent pass through a pitched roof at a 17/12 pitch?

Select one:
a.
7'

b.
5'

c.
6'

d.
8'

Feedback

Your answer is incorrect.

The correct answer is: 7'

Question text

What is the maximum length of a single wall vent connector 6″ in diameter that serves more than one appliance?

Select one:
a.
6'

b.
8'

c.
10'

d.
4'

Feedback

Your answer is incorrect.

The correct answer is: 10'

Question text

What is the minimum height a vent shall extend above the highest connected appliance draft hood?

Select one:
a.
8'

b.

5'

c.
10'

d.
3'

Feedback

Your answer is incorrect.

The correct answer is: 5'

Question **34**
Not answered
Marked out of 1.0
Flag question

Question text

An automatic flue damper when installed on an appliance equipped with a continuous pilot shall:

Select one:
a.
Only be installed on appliances with direct ignition.

b.
Flue dampers are prohibited to be installed with continuous pilot.

c.
Be installed only on appliances with draft control.

d.
Be designed to provide a fixed minimum opening of 20% flue area.

Feedback

Your answer is incorrect.

The correct answer is: Be designed to provide a fixed minimum opening of 20% flue area.

Question text

When a single-wall vent connector 3″ in diameter passes through a metal thimble, what is the diameter of the metal thimble if the vent connector is 6 feet in length?

Select one:
a.
3"

b.
9"

c.
7"

d.
5"

Feedback

Your answer is incorrect.

The correct answer is: 5"

How much Methane does Natural gas contain as a percentage (%) ?

Select one:
a.
80 to 95 %

b.
50 to 60%

c.
100%

d.
60 to 70 %

Feedback

Your answer is correct.

The correct answer is: 80 to 95 %

Question text

Is natural gas a toxic gas? (type yes or no) Answer

Feedback

The correct answer is: No

Question text

For the following questions you can type in the chemical formulas as follows (eg water = H2o) do not include spaces in your answers.

List the chemical formula for Natural Gas. Answer

Feedback

The correct answer is: CH4

Question text

List the chemical formula for Propane. Answer

Feedback

The correct answer is: C3H8

Question **5**

Question text

List the chemical formula for Butane. Answer

Feedback

The correct answer is: C4H10

Flag question

Question text

List the chemical formula for Carbon monoxide. Answer

Feedback

The correct answer is: CO

Flag question

Question text

List the chemical formula for Carbon dioxide. Answer

Feedback

The correct answer is: CO2

Question text

List the chemical formula for Methane. Answer

Feedback

The correct answer is: CH4

Question text

List the chemical formula for Oxygen. Answer

Feedback

The correct answer is: O2

Question text

The ratio of the weight of a given volume of gas to the weight of an equal volume of air measured at standard temperature and pressure (60ºF @ 14.73 Psi or 15ºC @ 101.325 kPa). This is a description of...

Select one:

a.
Relative Volume

b.
Relative Density

c.
Weight of a substance compared to the density of Hg

d.
Relative Heat

Feedback

Your answer is incorrect.

The correct answer is: Relative Density

Question text

The total heat energy produced when a given volume of fuel is subjected to combustion.

Select one:
a.
Calorific Capacity

b.
Combustion Capacity

c.
Heating Value

d.
Specific Heat

Feedback

Your answer is incorrect.

The correct answer is: Heating Value

Question text

When one cubic foot of natural gas is burned it will produce Answer British Thermal Units.

Feedback

The correct answer is: 1000

Question text

Having any lesser amount of fuel than the lower flammable limit, a mixture would be Answer and would not burn.

Feedback

The correct answer is: lean

Question text

Which of the following is used to odourize natural gas?

Select one:
a.
Mercaptan

b.

Sulphur

c.
Citric Acid

d.
Onion Oil

Feedback

Your answer is correct.

The correct answer is: Mercaptan

Question text

Natural gas must be readily detectable when ________ of the fuel gas per volume is present.

Select one:
a.
less than 1%

b.
any amount

c.
more than 10%

d.
less than 10%

Feedback

Your answer is incorrect.

The correct answer is: less than 1%

Question text

At standard atmospheric pressure, 14.73 Psi (101.325 kPa), the boiling point of propane is Answer. Answer in Fahrenheit as ###F (including the letter "F") .

Feedback

-44 F

or

-42 C

The correct answer is: -44F

Question text

Fuel gases are usually transported and stored in liquid state rather than as a gas due to the following:

(C_3H_8) 270 times more fuel can be stored in the same space.

(C4H10) 235 times more fuel can be stored in the same space.

Select one:
True
False

Feedback

The correct answer is 'True'.

Question text

The limits of flammability of propane gas in air are approximately:

Select one:
a.
10% to 45%

b.
5% to 15.3%

c.
2.5% to 9.5%

d.
4.6% to 14%

Feedback

Your answer is correct.

The correct answer is: 2.5% to 9.5%

Question text

Identify the limits of flammability for natural gas in air:

Select one:
a.
4% to 14%

b.
6% to 12%

c.
4% to 10%

d.
14% to 24%

Feedback

Your answer is incorrect.

The correct answer is: 4% to 14%

Question text

Natural gas is composed mainly of:

Select one:
a.
butane

b.
carbon dioxide

c.
methane

d.
propane

Feedback

Your answer is correct.

The correct answer is: methane

Question text

The relative density of propane vapour is approximately:

Select one:
a.
1.5

b.
2.0

c.
0.6

d.
0.8

Feedback

Your answer is incorrect.

The correct answer is: 1.5

Question text

What is the calorific value of Butane gas?

Select one:
a.
$1{,}200\text{Btu/Ft.}^{3}(.352\text{kW/Ft.}^{3})$$1{,}200 Btu/Ft.3(.352 kW/Ft.3)$
b.

1,050Btu/Ft.3(.308kW/Ft.3)1,050Btu/Ft.3(.308kW/Ft.3)

c.

3,200Btu/Ft.3(.938kW/Ft.3)3,200Btu/Ft.3(.938kW/Ft.3)

d.

2,500Btu/Ft.3(.733kW/Ft.3)2,500Btu/Ft.3(.733kW/Ft.3)

Feedback

Your answer is correct.

The correct answer is: 3,200Btu/Ft.3(.938kW/Ft.3)3,200Btu/Ft.3(.938kW/Ft.3)

Question text

The heat generated by the complete combustion of a unit of fuel is commonly referred to as its:

Select one:

a.

combustion value

b.

distillation value

c.

calorific value

d.

flash value

Feedback

Your answer is correct.

The correct answer is: calorific value

Question text

Which of the following gases has the highest calorific value?

Select one:

a.

Carbon monoxide

b.

Natural Gas

c.

Butane

d.

Propane

Feedback

Your answer is correct.

The correct answer is: Butane

Question text

Natural gas must be preheated to approximately ________ ºF before it will ignite.

Select one:

a.
1,200

b.
212

c.
3,500

d.
1,000

Feedback

Your answer is incorrect.

The correct answer is: 1,200

Question text

The flame temperature of natural gas is approximately ________ ºF.

Select one:

a.
1,000

b.
212

c.
3,500

d.
1,200

Feedback

Your answer is correct.

The correct answer is: 3,500

Question text

The calorific value (heat value) of natural gas is approximately:

Select one:

a.
500Btu/Ft.^{3}(5.17kW/m^3)$500Btu/Ft.3(5.17kW/m3)$
b.
3,200Btu/Ft.^{3}(33kW/m^3)$3,200Btu/Ft.3(33kW/m3)$
c.
2,500Btu/Ft.^{3}(26kW/m^3)$2,500Btu/Ft.3(26kW/m3)$
d.
1,000Btu/Ft.^{3}(10.35kW/m^3)$1,000Btu/Ft.3(10.35kW/m3)$

Feedback

Your answer is correct.

The correct answer is: 1,000Btu/Ft.^{3}(10.35kW/m^3)$1,000Btu/Ft.3(10.35kW/m3)$

Question text

The specific gravity of a gas is the:

Select one:
a.
weight of a gas as compared to an equal volume of water
b.
heat in the gas
c.
weight of a gas as compared to an equal volume of air
d.
volume of the gas

Feedback

Your answer is correct.

The correct answer is: weight of a gas as compared to an equal volume of air

1,000 Btu = Answer kW

Feedback

1,000Btu×0.000293$\frac{kW}{Btu}$$1,000Btu×0.000293kWBtu$

The correct answer is: 0.293

Question **2**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

1,750 Btu = Answer kW

Feedback

$1,750\text{Btu}\times 0.000293\frac{\text{kW}}{\text{Btu}}$$1,750 Btu\times 0.000293 kW Btu$

The correct answer is: 0.513

Question **3**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

2,500 Btu = Answer kW

Feedback

$2,500\text{Btu}\times 0.000293\frac{\text{kW}}{\text{Btu}}$$2,500 Btu\times 0.000293 kW Btu$

The correct answer is: 0.733

Question **4**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

1 kW = Answer Btu

Feedback

$1\text{kW}\div 0.000293\frac{\text{kW}}{\text{Btu}}$ or $1\text{kW}\times 3,412.969\frac{\text{Btu}}{\text{kW}}$$1kW\div 0.000293 kW Btu$ or $1kW\times 3,412.969 Btu kW$

The correct answer is: 3412

Question **5**
Correct
Mark 1.00 out of 1.00
Flag question

Question text

0.733 kW = Answer Btu

Feedback

$0.733\text{kW}\div 0.000293\frac{\text{kW}}{\text{Btu}}$ or $0.733\text{kW}\times 3,412.969\frac{\text{Btu}}{\text{kW}}$$0.733kW\div 0.000293 kW Btu$ or $0.733kW\times 3,412.969 Btu kW$

The correct answer is: 2500

Question **6**
Incorrect
Mark 0.00 out of 1.00
Flag question

Question text

$1{,}050\mathrm{Btu/Ft.}_3 1{,}050 Btu/Ft.3$ = Answer $\mathrm{kW/m}_3 kW/m3$

Feedback

$1{,}050_{\mathrm{Btuft.3}}\times 0.000293_{\mathrm{kWBtu}}\times 35.31_{\mathrm{ft.3m3}} 1{,}050 Btuft.3\times 0.000293 kWBtu\times 35.31 ft.3m3$

The correct answer is: 10.863

Question **7**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

$2{,}500\mathrm{Btu/Ft.}_3 2{,}500 Btu/Ft.3$ = Answer $\mathrm{kW/m}_3 kW/m3$

Feedback

$2{,}500_{\mathrm{Btuft.3}}\times 0.000293_{\mathrm{kWBtu}}\times 35.31_{\mathrm{ft.3m3}} 2{,}500 Btuft.3\times 0.000293 kWBtu\times 35.31 ft.3m3$

The correct answer is: 25.865

Question **8**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

$3{,}300\mathrm{Btu/Ft.}_3 3{,}300 Btu/Ft.3$ = Answer $\mathrm{kW/m}_3 kW/m3$

Feedback

$3{,}300_{\mathrm{Btuft.3}}\times 0.000293_{\mathrm{kWBtu}}\times 35.31_{\mathrm{ft.3m3}} 3{,}300 Btuft.3\times 0.000293 kWBtu\times 35.31 ft.3m3$

The correct answer is: 34.141

Question **9**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

$0.25\mathrm{kW/Ft.}_3 0.25 kW/Ft.3$ = Answer $\mathrm{Btu/m}_3 Btu/m3$

Feedback

$0.25_{\mathrm{kWft.3}}\div 0.000293_{\mathrm{kWBtu}}\times 35.31_{\mathrm{ft.3m3}} 0.25 kWft.3\div 0.000293 kWBtu\times 35.31 ft.3m3$

The correct answer is: 30128

Question **10**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

$0.75\mathrm{kW/Ft.}^3$$0.75kW/Ft.^3$ = Answer $\mathrm{Btu/m}^3$$Btu/m^3$

Feedback

$0.75\frac{\mathrm{kW}}{\mathrm{ft.}^3}\div 0.000293\frac{\mathrm{kW}}{\mathrm{Btu}}\times 35.31\frac{\mathrm{ft.}^3}{\mathrm{m}^3}$$0.75\frac{kW}{ft.^3}\div 0.000293\frac{kW}{Btu}\times 35.31\frac{ft.^3}{m^3}$

The correct answer is: 90384

Question **11**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

$25.7\mathrm{kW/m}^3$$25.7kW/m^3$ = Answer $\mathrm{Btu/Ft.}^3$$Btu/Ft.^3$

Feedback

$25.7\frac{\mathrm{kW}}{\mathrm{m}^3}\div 0.000293\frac{\mathrm{kW}}{\mathrm{Btu}}\div 35.31\frac{\mathrm{ft.}^3}{\mathrm{m}^3}$$25.7\frac{kW}{m^3}\div 0.000293\frac{kW}{Btu}\div 35.31\frac{ft.^3}{m^3}$

The correct answer is: 2484

Question **12**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

$15.7\mathrm{kW/m}^3$$15.7kW/m^3$ = Answer $\mathrm{Btu/Ft.}^3$$Btu/Ft.^3$

Feedback

$15.7\frac{\mathrm{kW}}{\mathrm{m}^3}\div 0.000293\frac{\mathrm{kW}}{\mathrm{Btu}}\div 35.31\frac{\mathrm{ft.}^3}{\mathrm{m}^3}$$15.7\frac{kW}{m^3}\div 0.000293\frac{kW}{Btu}\div 35.31\frac{ft.^3}{m^3}$

The correct answer is: 1518

Question **13**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

$10.35\mathrm{kW/m}^3$$10.35kW/m^3$ = Answer $\mathrm{Btu/Ft.}^3$$Btu/Ft.^3$

Feedback

$10.35\frac{\mathrm{kW}}{\mathrm{m}^3}\div 0.000293\frac{\mathrm{kW}}{\mathrm{Btu}}\div 35.31\frac{\mathrm{ft.}^3}{\mathrm{m}^3}$$10.35\frac{kW}{m^3}\div 0.000293\frac{kW}{Btu}\div 35.31\frac{ft.^3}{m^3}$

The correct answer is: 1000

Question **14**

Not answered

Marked out of 1.00

Flag question

Question text

35,310Btu/m335,310$Btu/m3$ = Answer kW/Ft.3$kW/Ft.3$

Feedback

35,310Btum3×0.000293kWBtu÷35.31ft.3m335,310$Btum3$×0.000293$kWBtu$÷35.31$ft.3m3$

The correct answer is: 0.293

Question **15**

Not answered

Marked out of 1.00

Flag question

Question text

100000Btu/m3100000$Btu/m3$ = Answer kW/Ft.3$kW/Ft.3$

Feedback

100,000Btum3×0.000293kWBtu÷35.31ft.3m3100,000$Btum3$×0.000293$kWBtu$÷35.31$ft.3m3$

The correct answer is: 0.83

Question **16**

Not answered

Marked out of 1.00

Flag question

Question text

1 inch w.c. = Answer Psi

Feedback

27.72"w.c.1Psi=1"w.c.X27.72"$w.c.$1Psi=1"$w.c.X$

The correct answer is: 0.036

Question **17**

Not answered

Marked out of 1.00

Flag question

Question text

7 inch w.c. = Answer Psi

Feedback

27.72"w.c.1Psi=7"w.c.X27.72"$w.c.$1Psi=7"$w.c.X$

The correct answer is: 0.253

Question **18**

Not answered

Marked out of 1.00

Flag question

Question text

28 inch w.c. = Answer Psi

Feedback

27.72"w.c.1Psi=28"w.c.X$27.72"w.c.1Psi=28"w.c.X$

The correct answer is: 1.01

Question **19**

Not answered

Marked out of 1.00

Flag question

Question text

1 inch Hg. = Answer inch w.c.

Feedback

2.04"Hg27.72"$w.c.$=1"HgX

The correct answer is: 13.588

Question **20**

Not answered

Marked out of 1.00

Flag question

Question text

2 inch Hg. = Answer inch w.c.

Feedback

The correct answer is: 27.176

Question **21**

Not answered

Marked out of 1.00

Flag question

Question text

6 inch Hg. = Answer Psi

Feedback

The correct answer is: 2.941

Question **22**

Not answered

Marked out of 1.00

Flag question

Question text

1 Psi = Answer OSI

Feedback

The correct answer is: 16

Question **23**

Not answered

Marked out of 1.00

Flag question

Question text

14 inch w.c. = Answer OSI

Feedback

The correct answer is: 8

Question **24**

Not answered

Marked out of 1.00

Flag question

Question text

8 OSI =Answer Psi

Feedback

The correct answer is: 0.5

Question **25**

Not answered

Marked out of 1.00

Flag question

Question text

1 Psi = Answer kPa

Feedback

The correct answer is: 6.895

Question **26**

Not answered

Marked out of 1.00

Flag question

Question text

14 inch w.c. = Answer kPa

Feedback

The correct answer is: 3.482

Question **27**

Incorrect

Mark 0.00 out of 1.00

Flag question

Question text

One cubic meter of propane vapour will produce:

Select one:

a.

88,275 Btu

b.

25,000 Btu

c.

35,310 Btu

d.

112,992 Btu

Feedback

Your answer is incorrect.

$$2{,}500\,\frac{\text{Btu}}{\text{ft.}^3}\times 35.31\,\frac{\text{ft.}^3}{\text{m}^3}=88{,}275\,\text{Btu}$$

$2{,}500\,Btu\,ft.3\times 35.31\,ft.3\,m3=88{,}275\,Btu$

The correct answer is: 88,275 Btu

Complete combustion of 5 cubic feet of propane gas would produce _______ kW of heat.

Select one:

a.

1.46

b.

3.66

c.

12,500

d.

26

Feedback

Your answer is incorrect.

$$2{,}500_{\text{Btuft.3}}\times 5\text{ft.}_{3}\times 0.000293_{\text{kWBtu}}=3.66\text{kW}$$

The correct answer is: 3.66

Question text

20 Imperial gallons of liquid propane would weigh ______ pounds.

Select one:

a.
100

b.
20

c.
200

d.
10

Feedback

Your answer is incorrect.

$$20\text{Imp.Gal.}\times 10_{\text{lbs.gal.}}\times 0.51=102\text{lbs.}$$

The correct answer is: 100

Question **30**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

1 cubic meter of liquid propane would yield how many Btu's?

Select one:

a.
675,000

b.
88,275

c.
2,500

d.
23,834,250

Feedback

Your answer is correct.

$$1\,\text{m}^3 \times 270 \times 35.31 \frac{\text{ft.}^3}{\text{m}^3} \times 2{,}500 \frac{\text{Btu}}{\text{ft.}^3} = 23{,}834{,}250\,\text{Btu}$$

The correct answer is: 23,834,250

Question **31**

Correct

Mark 1.00 out of 1.00

Flag question

Question text

One cubic meter of natural gas will produce:

Select one:

a.
35.310 Btu

b.
37.075 Btu

c.
35,310 Btu

d.
37,075 Btu

Feedback

Your answer is correct.

$$1\,\text{m}^3 \times 35.31 \frac{\text{ft.}^3}{\text{m}^3} \times 1{,}000 \frac{\text{Btu}}{\text{ft.}^3} = 35{,}310\,\text{Btu}$$

The correct answer is: 35,310 Btu

Question text

How many kilowatts of heat energy are available in 8 cubic feet of liquefied natural gas? Answer kW

Feedback

$$8\,\text{ft.}^3 \times 600 \times 1{,}000 \frac{\text{Btu}}{\text{ft.}^3} \times 0.000293 \frac{\text{kW}}{\text{Btu}} = 1{,}406.4\,\text{kW}$$

The correct answer is: 1406.4

Question text

If an appliance has a rated input of 150,000 Btuh how many cubic meters per hour of natural gas would it require? Answer

Feedback

$150{,}000\text{Btuh} \div 1{,}000\frac{\text{Btu}}{\text{ft.}^3} = 150\text{CFH} \div 35.31\frac{\text{ft.}^3}{\text{m}^3} = 4.248\frac{\text{m}^3}{\text{h}}$150,000𝐵𝑡𝑢ℎ÷1,000𝐵𝑡𝑢𝑓𝑡.3=150𝐶𝐹𝐻÷35.31𝑓𝑡.3𝑚3=4.248𝑚3ℎ

The correct answer is: 4.248

Question text

How many cubic feet per hour of natural gas would be required for an appliance that has a rated input of 45 kW/HR? answer to 3 decimal places. Answer CFH

Feedback

$45\text{Kw} \div 0.000293\frac{\text{kW}}{\text{Btu}} \div 1{,}000\frac{\text{Btu}}{\text{ft.}^3} = 153.584\text{CFH}$

The correct answer is: 153.584

Question text

How many US gallons per hour of liquid propane would be required for an appliance that

has a rated input of 115 kw/hr? Answer to 2 decimal places. Answer

Feedback

$115\frac{\text{kW}}{\text{h}} \div 0.000293\frac{\text{kW}}{\text{Btu}} \div 2{,}500\frac{\text{Btu}}{\text{ft.}^3} \div 270 \times 7.48\frac{\text{USG}}{\text{ft.}^3} = 4.349\frac{\text{USG}}{\text{h}}$115𝑘𝑊ℎ÷0.000293𝑘𝑊𝐵𝑡𝑢÷2,500𝐵𝑡𝑢𝑓𝑡.3÷270×7.48𝑈𝑆𝐺𝑓𝑡.3=4.349𝑈𝑆𝐺ℎ

The correct answer is: 4.34

Question text

How many Btu's would be contained in 40 pounds of liquid propane? answer to 2 decimal places. Answer Btu

Feedback

$62.4\frac{\text{lbs.}}{\text{ft.}^3} \times 0.51 = 31.824\frac{\text{lbs.}}{\text{ft.}^3}\text{propane}$62.4𝑙𝑏𝑠.𝑓𝑡.3×0.51=31.824𝑙𝑏𝑠.𝑓𝑡.3𝑝𝑟𝑜𝑝𝑎𝑛𝑒

$40\text{lbs.} \div 31.824\frac{\text{lbs.}}{\text{ft.}^3} \times 270 \times 2{,}500\frac{\text{Btu}}{\text{ft.}^3} = 848{,}416.29\text{Btu}$

The correct answer is: 848416.29

Question text

How many kilowatts are available in one liter of liquid butane? Answer to 3 decimal places. Answer kW

Feedback

1l÷4.54lGal.÷6.24Gal.ft.3×235×3,200Btuft.3×0.000293kWBtu=7.778kW

The correct answer is: 7.778

Question text

A gas fitter must convert an appliance that requires 40 cubic feet per hour of propane to natural gas. How many cubic meters per hour of natural gas would it require? Answer to 3

decimal places. Answer

Feedback

0CFH×2,500Btuft.3÷1,000Btuft.3÷35.31ft.3m3=2.832m3h40CFH×2,500Btuft.3÷1,000Btuft.3÷35.31ft.3m3=2.832m3h

The correct answer is: 2.832

Question text

How many cubic feet of natural gas must be supplied to a hot water tank if it is required to heat 40 US gallons of water from 50ºF to 140ºF if the appliance is 75% efficient? Answer to 3

decimal places. Answer

Feedback

50ºF−−>140ºF=90ºF×40USG×8.333lbs.Gal.=29,998.8Btu50ºF−−>140ºF=90ºF×40USG×8.333lbs.Gal.=29,998.8Btu
29,998.8Btu÷0.75=39,998.4Btu29,998.8Btu÷0.75=39,998.4Btu
39,998.4Btu÷1,000Btuft.3=39.998ft.3

The correct answer is: 39.998

If a furnace uses 15 cubic meters of propane gas per hour and is 82% efficient, how many Btuh are being delivered to the building? Answer to 1 decimal place. Answer Btuh

Feedback

15m3h×35.31ft.3m3×2,500Btuft.3×0.82=1,085,782.5Btuh

The correct answer is: 1085782.5

The major interruption in fuel supply could stop production and result in what?

Select one:
a.
Major economic losses

b.
Not a big deal

c.
Inconvenience

d.
Minor economic losses

Feedback

Your answer is correct.

The correct answer is: Major economic losses

Question text

When is it practical to consider Bio-gas as a supplemental fuel source?

Select one:
a.
When supply exceeds demand

b.
When demand exceeds supply

c.
It is never practical

d.
Bio-gas is hazardous and should never be used

Feedback

Your answer is correct.

The correct answer is: When demand exceeds supply

Question text

When organic waste degrades what does it produce?

Select one:
a.
Water

b.
Energy

c.
Carbon Dioxide

d.
Methane

Feedback

Your answer is correct.

The correct answer is: Methane

Question text

What is the process of bacteria digesting organic material referred to as?

Select one:
a.
Energetic activity

b.
Process Digestion

c.
Anaerobic digestion

d.
Aerobic activity

Feedback

Your answer is correct.

The correct answer is: Anaerobic digestion

Question text

What is term used to describe separating methane from the bio-gas?

Select one:
a.
Sweeping

b.
Bleaching

c.
Scrubbing

d.
Manufacturing

Feedback

Your answer is incorrect.

The correct answer is: Scrubbing

Question text

Calculate the calorific value of a propane/air mixture with 65% propane.

Select one:
a.
1 500 Btu/cubic foot

b.
1 235 Btu/cubic foot

c.
1 750 Btu/cubic foot

d.
1 625 Btu/cubic foot

Feedback

Your answer is incorrect.

The correct answer is: 1 625 Btu/cubic foot

Question text

Calculate the specific gravity of a propane/air mixture with 65% propane.

Select one:
a.
1.765

b.
1.342

c.
1.338

d.
1.182

Feedback

Your answer is incorrect.

(65/100 x 1.52) + (35/100 x 1) = 1.338

The correct answer is: 1.338

What ASTM specifications must black steel piping conform to?

Select one or more:
a.
C203

b.
A106

c.
A53

d.
5LX

e.
C200

Feedback

Your answer is partially correct.

You have correctly selected 1.
The correct answers are: A53, A106

Question text

When the operating pressure is 200 psi, what schedule would the steel pipe have to be if it was threaded?

Select one:
a.
Schedule 160

b.
Schedule 120

c.
Schedule 40

d.
Schedule 80

Feedback

Your answer is incorrect.

The correct answer is: Schedule 80

Question text

Schedule number or weight classification refers to?

Select one:
a.
The wall thickness

b.
The outside diameter

c.

The pressure it can handle

d.
The weight of the length of pipe

Feedback

Your answer is incorrect.

The correct answer is: The wall thickness

Question text

When comparing two pipes with the same NPS and different schedule numbers, what varies?

Select one:
a.
The fitting used to join the pipes

b.
The inside diameter

c.
The outside diameter

d.
The actual pipe length

Feedback

Your answer is correct.

The correct answer is: The inside diameter

Question text

ASTM requires pipes to be labelled with which specifications (select all that apply)?

Select one or more:
a.
Color

b.
Country of origin

c.
Hydrostatic test pressure

d.
ASTM specification number

e.
Schedule/weight of the pipe

f.
Foundry that manufactured the pipe

g.
Length

h.
Pipe manufacturing method

i.
Manufacturers name

Feedback

Your answer is partially correct.

You have correctly selected 2.
The correct answers are: Manufacturers name, Pipe manufacturing method, Schedule/weight of the pipe, ASTM specification number, Length

Question text

What is the standard steel pipe coating?

Select one:
a.
Galvanized

b.
Pickled

c.
Lacquer coated

d.
Rusted

e.
Bare metal

Feedback

Your answer is incorrect.

The correct answer is: Lacquer coated

Question text

What type of fitting is to be used on threaded gas pipe lines?

Select one:
a.
Cast iron

b.

Malleable iron

c.
Stainless steel

d.
Plastic

Feedback

Your answer is incorrect.

The correct answer is: Malleable iron

Question text

The gas operating pressure is 180 psi, what class of fitting must be used (minimum)?

Select one:
a.
Class 300

b.
Class 6000

c.
Class 150

d.
Class 2000

Feedback

Your answer is incorrect.

The correct answer is: Class 300

Question text

What coating is used to make steel pipe galvanized?

Select one:
a.
Mercury

b.
Zinc

c.
Copper

d.
Magnesium

Feedback

Your answer is incorrect.

The correct answer is: Zinc

Question text

When installing galvanized pipe and fittings what joining method is not recommended?

Select one:
a.
Threading

b.
Welding

c.
Grooving

d.
Compression

Feedback

Your answer is incorrect.

The correct answer is: Welding

Question text

What standard must the galvanized fittings conform to?

Select one:
a.
ASTM 305

b.
AWWA C12.5

c.
ANSI B16.3

d.
CSA 150

Feedback

Your answer is incorrect.

The correct answer is: ANSI B16.3

Question text

Copper tubing that is installed above ground may be up to and including 2″ NPS pipe?

Select one:
a.

True

b.
False

Feedback

Your answer is incorrect.

The correct answer is: False

The piping industry uses copper pipe with a purity of at least?

Select one:
a.
99.9%

b.
80.2%

c.
12.9%

d.
60.4%

Feedback

Your answer is incorrect.

The correct answer is: 99.9%

What type of copper tube may be used underground?

Select one:
a.
Type L

b.
Type K

c.
Type M

d.
Type H

Feedback

Your answer is correct.

The correct answer is: Type K

Question text

Thermoset plastic pipe can be reheated and reshaped into a new plastic pipe indefinitely.

Select one:
a.
True

b.
False

Feedback

Your answer is correct.

The correct answer is: False

Flag question

Question text

What type of CSST fittings can be used on CSST systems?

Select one:
a.
No certification needed

b.
Any

c.
Manufacturer certified

d.
All types of CSST fittings are interchangeable

Feedback

Your answer is incorrect.

The correct answer is: Manufacturer certified

Question text

In piping systems where two different piping materials are joined, what type of union would be used?

Select one:
a.
Malleable

b.
Ground joint type

c.
Copper

d.
Gasket type

Feedback

Your answer is incorrect.

The correct answer is: Gasket type

Question text

What type of nipple must not be installed on a gas system?

Select one:

a.
2″ nipple

b.
Close nipple

c.
Short nipple

d.
Long nipple

Feedback

Your answer is incorrect.

The correct answer is: Close nipple

Question text

Class 150 malleable iron fittings are suitable for LP gases up to what pressure?

Select one:

a.
50 psi

b.
300 psi

c.
150 psi

d.
200 psi

Feedback

Your answer is incorrect.

The correct answer is: 300 psi

Question text

What is the max size of a dirt pocket installed on a gas pipe line?

Select one:

a.
2 inch

b.
1 inch

c.
1/2 inch

d.
Same size as the piping it serves

Feedback

Your answer is incorrect.

The correct answer is: 2 inch

Question text

Drip pockets maybe hidden behind building features such as walls?

Select one:
a.
True

b.
False

Feedback

Your answer is incorrect.

The correct answer is: False

What type of flange is this and how is it attached to the pipe?

Select one:
a.
Weld neck flange, butt weld

b.

Weld neck flange, fillet weld

c.
Socket weld flange, fillet weld

d.
Slip on flange, butt weld

Feedback

Your answer is correct.

The correct answer is: Weld neck flange, butt weld

Question text

What flange is used when welding is impractical or no permanent connection is desired?

Select one:
a.
A lap-joint flange

b.
A weld neck flange

c.
A blind flange

d.
A threaded flange

Feedback

Your answer is incorrect.

The correct answer is: A threaded flange

Question text

What is another name for a lap-joint flange?

Select one:
a.
Van stone flange

b.
Weld neck flange

c.
Blind flange

d.
Slip on flange

Feedback

Your answer is incorrect.

The correct answer is: Van stone flange

Question text

What does this drafting symbol refer to?

Select one:

a.

A weld neck flange

b.

A threaded flange

c.

An orifice flange

d.

A tee fitting

Feedback

Your answer is correct.

The correct answer is: A threaded flange

Question text

To make the line size smaller without adding an extra fitting, what type of flange would be installed?

Select one:

a.

Reducing flange

b.

Socket weld flange

c.

Orifice flange

d.

Screwed flange

Feedback

Your answer is incorrect.

The correct answer is: Reducing flange

Question text

What type of face does the image of the flange employ?

Select one:
a.
Lap joint

b.
Flat face

c.
Ring joint

d.
Raised face

Feedback

Your answer is incorrect.

The correct answer is: Raised face

Question text

Gate valves are often used for what type of service?

Select one:
a.
Gas service

b.
High pressure

c.

Throttling

d.
On-off service

Feedback

Your answer is incorrect.

The correct answer is: On-off service

Question text

Which valve is used to relieve high pressure system conditions?

Select one:
a.
Gate valve

b.
Relief valve

c.
Check valve

d.
Globe valve

Feedback

Your answer is incorrect.

The correct answer is: Relief valve

Question text

What are the principle end connections found on valves? (select all that apply)

Select one or more:
a.
Welded

b.
Soldered

c.
Compression

d.
Flared

e.
Hub end

f.

Threaded

g.
Flanged

Feedback

Your answer is partially correct.

You have correctly selected 1.
The correct answers are: Threaded , Welded, Flanged, Compression, Flared, Soldered , Hub end

Flag question

Question text

When it is desirable to use a valve that is easy to disassemble and reassemble, what type of bonnet assembly would be used?

Select one:
a.
Welded bonnet

b.
Threaded bonnet

c.
Clip-type bonnet

d.
Pressure seal bonnet

Feedback

Your answer is correct.

The correct answer is: Clip-type bonnet

Question text

What is the stem design of the valve shown?

Select one:

a.
Outside screw non-rising stem

b.
Inside screw rising stem

c.
Outside screw rising stem

d.
Outside screw non-rising stem

Feedback

Your answer is incorrect.

The correct answer is: Inside screw rising stem

Question text

What is the stem design of valve shown?

Select one:
a.
Inside screw rising stem

b.
Sliding stem

c.
OS&Y

d.
Outside screw non-rising stem

Feedback

Your answer is correct.

The correct answer is: Sliding stem

Question text

What is the abbreviation OWG?

Select one:
a.
Oil, water, gas

b.
Water pressure

c.

Gas and liquid pressure

d.
Working oil pressure

Feedback

Your answer is incorrect.

The correct answer is: Oil, water, gas

Question text

When a valve is marked with only one number, what pressure is shown?

Select one:
a.
Oil

b.
Steam

c.
Water

d.
Gas

Feedback

Your answer is incorrect.

The correct answer is: Steam

Question text

How are valve connections sized?

Select one:
a.
NPS

b.
Pressure rating

c.
IPS

d.
C value

Feedback

Your answer is incorrect.

The correct answer is: NPS

When penetrating concrete walls with gas piping, it is recommended practice to install what?

Select one:
a.
A pipe sleeve

b.
Nothing

c.
Extra fittings

d.
A flexible line

Feedback

Your answer is incorrect.

The correct answer is: A pipe sleeve

Question text

When installing a pipe through notched joists what should be installed to add structural integrity to the joist?

Select one:
a.
Sistered joists

b.
Nails

c.
Metal mending plates

d.
A pipe sleeve

Feedback

Your answer is correct.

The correct answer is: Metal mending plates

Question text

What would be installed on piping underground to prevent movement at abrupt changes in direction?

Select one:
a.
Trapeze hangers

b.
Elastomeric gaskets

c.
Rocks

d.
Thrust blocks

Feedback

Your answer is incorrect.

The correct answer is: Thrust blocks

Question text

What is the term used when dissimilar metals contact one another through an electrolyte solution?

Select one:
a.
Hyperbolics

b.
Electrolysis

c.
Metalosis

d.
Metabolism

Feedback

Your answer is correct.

The correct answer is: Electrolysis

Question text

When using a steel hanger to support copper pipe, the steel hanger must be insulated by ______ on either side of the hanger?

Select one:
a.
4 inches

b.
1/2 inch

c.
2 inches

d.

1 inch

Feedback

Your answer is incorrect.

The correct answer is: 1 inch

Question text

What type of hanger is typically used to support larger/heavier pipe?

Select one:
a.
Plastic nail in type

b.
Strapping

c.
Ring hanger

d.
No hanger needed

Feedback

Your answer is correct.

The correct answer is: Ring hanger

Question text

Spring hangers are used to support equipment and piping when they will experience what type of movement?

Select one:
a.
Axial

b.
Vertical

c.
Horizontal

d.
Rotational

Feedback

Your answer is correct.

The correct answer is: Vertical

Question text

A pipe chair is another word for what type of hanger?

Select one:
a.
Swivel ring hanger

b.
Split ring hanger

c.
Roller hanger

d.
Clevis hanger

Feedback

Your answer is correct.

The correct answer is: Roller hanger

Question text

What rating is given to indicate a materials ability to resist the heat from flame or fire before being consumed?

Select one:
a.
L rating

b.
F rating

c.
W rating

d.
T rating

Feedback

Your answer is correct.

The correct answer is: F rating

Question text

When installing piping through studs, what is the recommended attachment to install on the stud where the pipe passes through?

Select one:
a.
Fire stopping

b.

Pipe protection plates

c.
Plastic hangers

d.
Blocking

Feedback

Your answer is incorrect.

The correct answer is: Pipe protection plates

Orfice

What are the acceptable range limits when comparing CLOCKED inputs to the manufacturer's RATED inputs ?

Select one:
a.
0 % over-fired / 0 % over-fired

b.
+/- 20 %

c.
10 % under-fired / 0 % over-fired

d.
10 % over-fired / 0 % under-fired

Feedback

Your answer is correct.

The correct answer is: 10 % under-fired / 0 % over-fired

Question text

Which of the following is the low pressure clocking formula ?

Select one:
a.
# sec / rev. x test dial volume x calorific value / 3600 sec / hr

b.
3600 secs / hr x test dial volume x calorific value / # sec / rev.

c.
3600 secs / hr x test dial volume x calorific value / rated input

d.
3600 secs / hr x test dial volume x calorific value / clocked input

Feedback

Your answer is incorrect.

The correct answer is: 3600 secs / hr x test dial volume x calorific value / # sec / rev.

Question text

If a natural gas meter @ 7 inches water column pressure is used to clock an appliance and it takes 23 seconds for the 2 cubic foot test dial to make one revolution. What is the clocked input of this appliance if the calorific value of the gas is 1050 Btu's / feet^3 ? (To nearest whole number)

Answer:

Feedback

3600 sec / hour ÷ 23 sec / rev. x 2 feet ^{3} x 1050 Btu's ^{3} / feet ^{3}

The correct answer is: 328696

Question text

The testing pressure and duration of the test for gas piping systems after appliances are connected is:

Select one:

a.
normal working pressure for 10 minutes

b.
50 psi for 10 minutes

c.
1/2 Psi for 10 minutes

d.
normal working pressure for 24 hours

Feedback

Your answer is incorrect.

B149.1 [6.22.3 (b & d)]

The correct answer is: normal working pressure for 10 minutes

Question text

A furnace fired on natural gas is clocked at 20 seconds for one revolution of a 0.05 cubic meter test dial. The pressure of the gas in the meter is 7 inches water column (1.74 kPa). Calorific value = 1,000 BtuFt.3$BtuFt.3$ (10.35 kW/m 3). The correct input is closest to:

Select one:

a.
90,000 Btu/h (26.4 kW)

b.
320,000 Btu/h (93.6 kW)

c.
9,000 Btu/h (2.63 kW)

d.
93.15 Btu/h (0.027 kW)

Feedback

Your answer is correct.

$\frac{3{,}600 \frac{\text{sec.}}{\text{hr.}}}{20 \frac{\text{sec.}}{\text{rev.}}} \times 0.05 \frac{\text{m}^3}{\text{rev.}} = 9 \frac{\text{m}^3}{\text{hr}}$

$9 \frac{\text{m}^3}{\text{hr.}} \times 35{,}310 \frac{\text{Btu}}{\text{m}^3} = 317{,}790 \frac{\text{Btu}}{\text{h}}$

The correct answer is: 320,000 Btu/h (93.6 kW)

Question text

A 5 cubic foot test dial on a low pressure meter takes 30 seconds to make 1 complete revolution. The correct flow rate is closest to:

Select one:
a.
120 cubic feet/hour (3.36 m^3)
b.
30 cubic feet/hour (0.85 m^3)
c.
750 cubic feet/hour (21.24 m^3)
d.
600 cubic feet/hour (16.80 m^3)

Feedback

Your answer is correct.

$\frac{3{,}600 \frac{\text{sec.}}{\text{hr.}}}{30 \frac{\text{sec.}}{\text{rev.}}} \times 5 \frac{\text{ft.}^3}{\text{rev.}} = 600\,\text{CFH}$

The correct answer is: 600 cubic feet/hour (16.80 m^3)

Question text

A low pressure meter set requires 32 seconds for a 0.05 m^3 test dial to make one revolution. The calorific value of the gas is 1,000 $\frac{\text{Btu}}{\text{Ft.}^3}$. The closest correct input is:

Select one:
a.
582,000 Btu/h

b.
1,986,948 Btu/h

c.
199,000 Btu/h

d.
56,250 Btu/h

Feedback

Your answer is incorrect.

$\frac{3,600 \frac{sec.}{hr.}}{32 \frac{sec.}{rev.}} \times 0.05 \frac{m^3}{rev.} = 5.625 \frac{m^3}{hr.}$ $\frac{3,600 \frac{sec.}{hr.}}{32 \frac{sec.}{rev.}} \times 0.05 \frac{m^3}{rev.} = 5.625 \frac{m^3}{hr.}$
$5.625 \frac{m^3}{hr.} \times 35,310 \frac{Btu}{m^3} = 198,619 Btuh$ $5.625 \frac{m^3}{hr.} \times 35,310 \frac{Btu}{m^3} = 198,619 Btuh$

The correct answer is: 199,000 Btu/h

Question text

A low pressure propane meter with a 1 cubic foot dial takes 25 seconds for a revolution. The correct input is closest to:

Select one:
a.
360,000 Btu/h (105.44 kW)

b.
325,451 Btu/h (95.32 kW)

c.
151,200 btu/h (44.28 kW)

d.
403,200 Btu/h (118.09 kW)

Feedback

Your answer is incorrect.

$\frac{3,600 \frac{sec.}{hr.}}{25 \frac{sec.}{rev.}} \times 1 \frac{ft.^3}{rev.} = 144 CFH$ $\frac{3,600 \frac{sec.}{hr.}}{25 \frac{sec.}{rev.}} \times 1 \frac{ft.^3}{rev.} = 144 CFH$
$144 CFH \times 2,500 \frac{Btu}{ft.^3} = 360,000 Btuh$ $144 CFH \times 2,500 \frac{Btu}{ft.^3} = 360,000 Btuh$

The correct answer is: 360,000 Btu/h (105.44 kW)

Question text

A furnace rated at 250,000 Btu/h (73.23 kW) is fired on natural gas. The calorific value = 1,000 $\frac{Btu}{Ft.^3}$ $\frac{Btu}{Ft.^3}$ (10.35 $\frac{kW}{m^3}$ $\frac{kW}{m^3}$). How long will it take the 5 cubic foot test dial to make one complete revolution on this low pressure meter?

Select one:
a.
100 seconds

b.

180 seconds

c.
18 seconds

d.
72 seconds

Feedback

Your answer is incorrect.

input=3,600sec.hr.×TD×C.V.Tsec.rev.$input=3{,}600 sec.hr.\times TD\times C.V.Tsec.rev.$
Tsec.rev.=3,600sec.hr.×5ft.3rev.×1,000Btuft.3250,000Btuh$Tsec.rev.=3{,}600 sec.hr.\times 5 ft.3 rev.\times 1{,}000 Btuft.3250{,}000 Btuh$

The correct answer is: 72 seconds

Question text

Calculate the input for the following natural gas appliance:

- Calorific value of gas = 1,000 BtuFt.3$BtuFt.3$ (10.35 kWm3$kWm3$)
- Meter pressure = 7 inches water column (1.74 kPa)
- Manifold pressure = 5 inches water column (1.24 kPa)
- Local atmospheric pressure = 14.68 Psia
- Test dial = 1 $Ft.^3$
- One revolution of the test dial takes 31.5 seconds

Select one:
a.
115,428 Btu/h (33.81 kW)

b.
114,285 Btu/h (33.47 kW)

c.
119,999 Btu/h (35.15 kW)

d.
116,129 Btu/h (34.01 kW)

Feedback

Your answer is incorrect.

3,600sec.rev.31.5sec.rev.×1ft.3rev.×1,000Btuft.3=114,286Btuh$3{,}600 sec.rev. 31.5 sec.rev.\times 1 ft.3 rev.\times 1{,}000 Btuft.3=114{,}286 Btuh$

The correct answer is: 114,285 Btu/h (33.47 kW)

The purpose of clocking a meter by a gas fitter is:

Select one:
a.
to see how long it takes the test dial to go around

b.
to check how much gas is consumed in a month for billing purposes

c.
solely used as a gas leak check

d.
to determine how much gas an appliance consumes per hour

Feedback

Your answer is correct.

The correct answer is: to determine how much gas an appliance consumes per hour

Question text

Determine the number of seconds for one revolution of a 2 cubic foot test dial if the input is 302,400 Btuh, the meter pressure is 7 inches water column and the gas used has a calorific value of 1,050 $\frac{\text{Btu}}{\text{Ft.}^3}$.

Select one:
a.
25 seconds

b.
4 seconds

c.
28.5 seconds

d.
23.8 seconds

Feedback

Your answer is incorrect.

$$\frac{3{,}600\frac{\text{sec.}}{\text{hr.}}\times 2\frac{\text{ft.}^3}{\text{rev.}}\times 1{,}050\frac{\text{Btu}}{\text{ft.}^3}}{302{,}400\,\text{Btuh}}=25\,\text{sec.}$$

The correct answer is: 25 seconds

Question text

A furnace fired on propane is clocked at 22 seconds on a 0.5 Ft.^3 test dial. The meter is low pressure. Its input will be closest to:

Select one:

a.
204,545 Btuh

b.
2,045,000 Btuh

c.
818,000 Btuh

d.
82,000 Btuh

Feedback

Your answer is incorrect.

3,600sec.hr.22sec.rev.×0.5ft.3rev.×2,500Btuft.3=204,545Btuh3,600sec.hr.22sec.rev.×0.5ft.3rev.×2,500Btuft.3=204,545Btuh

The correct answer is: 204,545 Btuh

Question text

A low pressure meter set measuring natural gas requires 32 seconds for a 1/2 cubic meter test dial to make one revolution. The correct input is closest to:

Select one:

a.
582 kW

b.
56,250 kW

c.
56.25 kW

d.
582 Btuh

Feedback

Your answer is correct.

3,600sec.hr.32sec.rev.×0.5m3rev.=56.25m3hr.3,600sec.hr.32sec.rev.×0.5m3rev.=56.25m3hr.
56.25m3hr.×10.35kWm3=582.188kWhr.56.25m3hr.×10.35kWm3=582.188kWhr.

The correct answer is: 582 kW

Question text

After replacing a hot water tank rated at 36,000 Btuh, the gas fitter must clock it. However, the furnace must stay on throughout the clocking procedure. Clocking only the furnace (rated at 120,000 Btuh), the test dial takes 150 seconds for one revolution (5 Ft.3Ft.3 test dial). With both units firing, the time per revolution drops to 116 seconds. Using natural gas, if the meter is a low-pressure meter, we can conclude that:

Select one:
a.
both units are underfired

b.
the hot water tank is overfired

c.
the furnace is overfired

d.
the installation is acceptable

Feedback

Your answer is incorrect.

(Both Appliances
) $3,600\,\mathrm{sec.hr.}116\,\mathrm{sec.rev.}\times 5\,\mathrm{ft.3rev.}\times 1,000\,\mathrm{Btuft.3}=155,172\,\mathrm{Btuh}$ $3,600 sec.hr.116 sec.rev.\times 5 ft.3 rev.\times 1,000 Btu ft.3=155,172 Btuh$

(Furnace
) $3,600\,\mathrm{sec.hr.}150\,\mathrm{sec.rev.}\times 5\,\mathrm{ft.3rev.}\times 1,000\,\mathrm{Btuft.3}=120,000\,\mathrm{Btuh}$ $3,600 sec.hr.150 sec.rev.\times 5 ft.3 rev.\times 1,000 Btu ft.3=120,000 Btuh$

(Hot Water
Tank) $155,172\,\mathrm{Btuh}-120,000\,\mathrm{Btuh}=35,172\,\mathrm{Btuh}$ $155,172 Btuh-120,000 Btuh=35,172 Btuh$

The correct answer is: the installation is acceptable

Question text

An appliance fired on low pressure natural gas takes 27 seconds for one revolution of a 0.05 m3m3 test dial. Its input will be closest to:

Select one:
a.
13.24 kW

b.
235,000 Btuh

c.
167,000 Btuh

d.
6.67 kW

Feedback

Your answer is correct.

$\frac{3,600 \frac{sec.}{hr.}}{27 \frac{sec.}{rev.}} \times 0.05 \frac{m^3}{rev.} \times 35,310 \frac{Btu}{m^3} = 235,400\ Btuh$

The correct answer is: 235,000 Btuh

Question text

A furnace is certified to operate on propane with an input of 375,000 Btu/h at 10 inches water column. The gas has a calorific value of $2,500\ \mathrm{Btu/Ft.^3}$. With the furnace operating, the meter is clocked and it takes 30 seconds for the 1 cubic foot test dial to make one complete revolution. From this, you can conclude that the appliance is:

Select one:

a.
underfired by 80%

b.
firing at the correct input

c.
underfired by 20%

d.
overfired by 20%

Feedback

Your answer is correct.

$\frac{3,600 \frac{sec.}{hr.}}{30 \frac{sec.}{rev.}} \times 1 \frac{ft.^3}{rev.} \times 2,500 \frac{Btu}{ft.^3}$

$\frac{300,000\ Btuh}{375,000\ Btuh} = 80\ \%$

The correct answer is: underfired by 20%

Which of the following is the pressure correction factor formula?

Select one:

a.
$PCF = \frac{MeterPressure \times StandardPressure}{LocalAtmosphericPressure}$

b.
$PCF = \frac{MeterPressure \times AbsolutePressure}{SeaLevelPressure}$

c.
$PCF = \frac{MeterPressure + StandardPressure}{LocalAtmosphericPressure}$

d.
$PCF = \frac{MeterPressure + LocalAtmosphericPressure}{StandardPressure}$

Feedback

Your answer is incorrect.

The correct answer is: PCF=MeterPressure+LocalAtmosphericPressureStandardPressure$PCF=MeterPressure+LocalAtmosphericPressureStandardPressure$

Question text

Which of the following is the temperature correction factor formula?

Select one:

a.
TCF=GasTemp+460(273)StandardTemp+460(273)$TCF=GasTemp+460(273)StandardTemp+460(273)$

b.
TCF=StandardPressure+14.73StandardTemp+460(273)$TCF=StandardPressure+14.73StandardTemp+460(273)$

c.
TCF=StandardTemp+460(273)GasTemp+460(273)$TCF=StandardTemp+460(273)GasTemp+460(273)$

d.
TCF=StandardTemp+460(273)StandardPressure+14.73$TCF=StandardTemp+460(273)StandardPressure+14.73$

Feedback

Your answer is incorrect.

The correct answer is: TCF=StandardTemp+460(273)GasTemp+460(273)$TCF=StandardTemp+460(273)GasTemp+460(273)$

Simply stated, Boyle's Law says that if the pressure exerted upon a gas increases, its volume will Answer.

Feedback

The correct answer is: decrease

Question text

Simply stated, Charles' Law says that if the temperature exerted upon a gas increases, its volume will Answer.

Feedback

The correct answer is: increase

Question text

Which type of meter has the correction factor stamped on a brass tag attached to the meter? Answer

Feedback

The correct answer is: Pressure Factor Measurement

Question text

Clock the input using the following information:

- Test Dial = 5 Ft.^{3} $Ft.3$
- Time for One Revolution = 15 seconds
- Gas = Natural
- Local Atmospheric Pressure = 14.28 Psi
- Meter Pressure = 10 Psi

Input = Answer Btuh

Feedback

input

$= \frac{3,600\frac{\text{sec.}}{\text{hr.}}}{15\frac{\text{sec.}}{\text{rev.}}}\times 5\frac{\text{ft.}^{3}}{\text{rev.}}\times\left(\frac{10\text{Psig}+14.28\text{Psi}}{14.73\text{Psia}}\right)\times 1,000\frac{\text{Btu}}{\text{ft.}^{3}}$ $3,600sec.hr.15sec.rev.\times 5ft.3rev.\times(10Psig+14.28Psi14.73Psia)\times 1,000Btuft.3$

The correct answer is: 1977600

Question text

Determine the input to the appliance if:

- Seconds per revolution = 17
- Gas temperature = 22ºF
- Test dial = 5 Ft.^{3} $Ft.3$
- Gas = Natural
- Local Atmospheric Pressure = 14.56 Psi
- Meter Pressure = 20 Psi
- Meter not temperature compensated

Input = Answer Btuh

Feedback

Input

$= \frac{3,600\frac{\text{sec.}}{\text{hr.}}}{17\frac{\text{sec.}}{\text{rev.}}}\times 5\frac{\text{ft.}^{3}}{\text{hr.}}\times\left(\frac{20\text{Psig}+14.56\text{Psi}}{14.73\text{Psia}}\right)\times\left(\frac{60\text{F}+460}{22\text{F}+460}\right)\times 1,000\frac{\text{Btu}}{\text{ft.}^{3}}$ $3,600sec.hr.17sec.rev.\times 5ft.3hr.\times(20Psig+14.56Psi14.73Psia)\times(60F+46022F+460)\times 1,000Btuft.3$

The correct answer is: 2680236

Question text

Given a closed container in which there is 16 cubic feet of air at 35 Psig, what will the volume of air be if water is forced into the container until the pressure becomes 105 Psig?

V_{2} $V2$ = Answer ft.^{3} $ft.3$

Feedback

$V_2 = \frac{V_1 P_1}{P_2}$

$V_2 = \frac{16 ft.^3 \times (35 Psig + 14.73 psi)}{(105 psig + 14.73 psi)}$

The correct answer is: 6.65

Question text

What will the volume be if the 920 cubic inches of gas is cooled from 16ºC to -7ºC ? (to 2 decimals)

V_2 = Answer $in.^3$

Feedback

$V_2 = \frac{V_1 T_2}{T_1}$

$V_2 = \frac{920 in.^3 \times (-7^\circ C + 273)}{(16^\circ C + 273)}$

The correct answer is: 846.78

Question text

If 310 cubic feet of oxygen is under a pressure of 50 Psig, to what gauge pressure must the gas be compressed so that it fits into a 15 cubic foot cylinder? (to 2 decimals)

P_2 = Answer $psig$

Feedback

$P_2 = \frac{V_1 P_1}{V_2}$

$P_2 = \frac{310 ft.^3 \times (50 psig + 14.73 psi)}{15 ft.^3}$

$P_2 = 1{,}337.75 psia - 14.73 psi$

The correct answer is: 1323.02

Question text

An 8 cubic foot air chamber at 40 Psig is released into the atmosphere. What volume will the released air have? (to 2 decimals)

V_2 Answer $ft.^3$

Feedback

$V_2 = \frac{V_1 P_1}{P_2}$

$V_2 = \frac{8 ft.^3 \times (40 psig + 14.73 psi)}{14.73 Psia}$

The correct answer is: 29.72

Question text

A gas measures 920 cubic inches at 60ºF. What is its volume at 93ºF?

V_2 = Answer $in.^3$

Feedback

V2=$V_1T_2T_1$ $V2=V1T2T1$

V2=920in.$_3$×(93F+460)(60F+460) $V2=920in.3\times(93F+460)(60F+460)$

The correct answer is: 978.38

Which of the following is the combined gas law formula?

Select one:

a.

T1P1V1=T2P2V2 $T1P1V1=T2P2V2$

b.

V1P1T1=V2P2T2 $V1P1T1=V2P2T2$

c.

V1P1T1=V2P2T2 $V1P1T1=V2P2T2$

d.

V1T1P1=V2T2P2 $V1T1P1=V2T2P2$

Feedback

Your answer is incorrect.

The correct answer is: V1P1T1=V2P2T2 $V1P1T1=V2P2T2$

Question text

All gases expand the same amount when heated one degree.

Select one:

True

False

Feedback

The correct answer is 'True'.

Question text

The test dials are timed on a gas meter that is recording a flow rate of gas at pressures more than 1/2 Psi (3.45 kPa). If no allowance is made for the compression of the gas because of the pressure, the volume of flow indicated by the test dials will:

Select one:

a.

indicate the unit is overfired

b.

indicate the exact Btu input to the combustion chamber

c.

be the volume of fuel gas expressed in SCFH entering the combustion chamber

d.
indicate the unit is underfired

Feedback

Your answer is incorrect.

The correct answer is: indicate the unit is underfired

Question text

The correction factor of 1.679 would be used for a system operating at:

Select one:

a.
2 psig (14 kPa)

b.
20 psig (140 kPa)

c.
10 psig (70 kPa)

d.
5 psig (34 kPa)

Feedback

Your answer is incorrect.

$$PCF = \frac{MeterPressure + LocalAtmosphericPressure}{StandardPressure}$$

$$MeterPressure = PCF \times StandardPressure - LocalAtmosphericPressure$$

$$MeterPressure = 1.679 \times 14.73 psia - 14.73 psia$$

$$MeterPressure = 10 psig$$

The correct answer is: 10 psig (70 kPa)

Question text

calculate the input to an appliance by using the following information:

- Local atmospheric pressure = 14.60 Psi
- Gas service line pressure = 60 Psig
- Gas pressure through the meter = 10 Psig
- House line pressure = 2 Psig
- Appliance manifold pressure = 5 inches water column
- Test dial = 0.05 m^3

Test dial completes one revolution in 1 minute. Calorific value of gas = 1,000 $\mathrm{Btu/Ft.}^{3})(10.35\backslash(\mathrm{kW/m}^{3}$ $Btu/Ft.3)(10.35\backslash(kW/m3$). The correct input is closest to which one of the following?

Select one:

a.
177,000 Btu/h (51.8 kW)

b.
300,000 Btu/h (87.9 kW)

c.
106,000 Btu/h (31 kW)

d.
536,000 Btu/h (156.9 kW)

Feedback

Your answer is incorrect.

$\frac{3{,}600\,\mathrm{sec.hr.}}{60\,\mathrm{sec.rev.}}\times 0.05\frac{\mathrm{m}^{3}}{\mathrm{rev.}}\times\left(\frac{10\mathrm{psig}+14.6\mathrm{psi}}{14.73\mathrm{psia}}\right)\times 35{,}310\frac{\mathrm{Btu}}{\mathrm{m}^{3}}=176{,}903\,\mathrm{Btuh}$ $3{,}600 sec.hr.60 sec.rev.\times 0.05 m3rev.\times(10psig+14.6psi14.73psia)\times 35{,}310 Btum3=176{,}903 Btuh$

The correct answer is: 177,000 Btu/h (51.8 kW)

Question text

Calculate the clocked input to the following boiler. The boiler has a rated input of 1,000,000 Btu/h (292.2 kW). it has four burners and operates at a manifold pressure of 7 inches water column (1.74 kPa). The fuel is natural gas with a calorific value of 1,050 $\mathrm{Btu/Ft.}^{3}$ $Btu/Ft.3$ (10.84 $\mathrm{kW/m}^{3}$ $kW/m3$). The building is at sea level (14.73 Psi) and is supplied with 5 Psig (34 kPa) at the meter. One revolution of the 0.1 m^{3} $m3$ test dial takes 26 seconds. The clocked input of the boiler is closest to which one of the following?

Select one:

a.
490,000 Btu\h (143 kW)

b.
750,000 Btu/h (220 kW)

c.
688,000 Btu/h (201 kW)

d.
520,000 Btu/h (152 kW)

Feedback

Your answer is incorrect.

$\frac{3{,}600 \frac{sec.}{hr.}}{26 \frac{sec.}{rev.}} \times 0.1 \frac{m^3}{rev.} \times 35.31 \frac{ft.^3}{m^3} \times \left(\frac{5 psig + 14.73 psi}{14.73 psia}\right) \times 1{,}050 \frac{Btu}{ft.^3} = 687{,}380 Btuh$3,600 sec.hr.26sec.rev.×0.1m3rev.×35.31ft.3m3×(5psig+14.73psi14.73psia)×1,050Btuft.3=687,380Btuh

The correct answer is: 688,000 Btu/h (201 kW)

Question text

Calculate the input to a burner that is fired on a 50% butane-air mixture if it takes 48 seconds for the 2 $ft.^3$ test dial to complete one revolution. The gas meter has an operating pressure of 5 Psig:

Select one:
a.
240,000 Btuh

b.
643,000 Btuh

c.
321,000 Btuh

d.
480,000 Btuh

Feedback

Your answer is incorrect.

$\frac{3{,}600 \frac{sec.}{hr.}}{48 \frac{sec.}{rev.}} \times 2 \frac{ft.^3}{rev.} \times \left(\frac{5 psig + 14.73 psi}{14.73 psia}\right) \times 1{,}600 \frac{Btu}{ft.^3} = 321{,}360 Btuh$3,600sec.hr.48sec.rev.×2ft.3rev.×(5psig+14.73psi14.73psia)×1,600Btuft.3=321,360Btuh

The correct answer is: 321,000 Btuh

Question text

Determine the input to a appliance under the following conditions (choose the closest answer):

- Service pressure = 60 Psig
- Local atmospheric pressure = 13.38 Psi
- Seconds/revolution = 18
- Meter pressure = 5 psig
- manifold pressure =7 inches water column
- Test dial = 0.05 $m^3/rev.$
- Building line pressure = 2 Psig
- Truck in the driveway = Green
- Weather = Partly Cloudy
- Gas = 1,050 $Btu/Ft.^3$

Select one:

a.
463,000 Btuh

b.
496,000 Btuh

c.
131,000 Btuh

d.
420,000 Btuh

Feedback

Your answer is incorrect.

$\frac{3,600\,\frac{\text{sec.}}{\text{hr.}}}{18\,\frac{\text{sec.}}{\text{rev.}}} \times 0.05\,\frac{\text{m}^3}{\text{rev.}} \times \left(\frac{5\,\text{Psig} + 13.38\,\text{Psi}}{14.73\,\text{Psia}}\right) \times 35.31\,\frac{\text{ft.}^3}{\text{m}^3} \times 1,050\,\frac{\text{Btu}}{\text{ft.}^3} = 462,702\,\text{Btuh}$

$\frac{3,600\,\frac{sec.}{hr.}}{18\,\frac{sec.}{rev.}} \times 0.05\,\frac{m^3}{rev.} \times \left(\frac{5Psig + 13.38Psi}{14.73Psia}\right) \times 35.31\,\frac{ft.^3}{m^3} \times 1,050\,\frac{Btu}{ft.^3} = 462,702\,Btuh$

The correct answer is: 463,000 Btuh

Question text

Calculate the input (to the closest answer) using the following information:

- Service Pressure = 60 Psig
- Meter pressure = 5 Psig
- Manifold pressure = 3.5 inches water column
- Test dial size = (5 cubic ft)
- Seconds/revolution = 20
- Calorific value = 1,000 $\text{Btu}/\text{Ft.}^3$

Select one:
a.
6,300,000 Btuh

b.
4,566,000 Btuh

c.
900,000 Btuh

d.
1,205,000 Btuh

Feedback

Your answer is incorrect.

$\frac{3,600\,\frac{\text{sec.}}{\text{hr.}}}{20\,\frac{\text{sec.}}{\text{rev.}}} \times 5\,\frac{\text{ft.}^3}{\text{rev.}} \times \left(\frac{5\,\text{Psig} + 14.73\,\text{Psi}}{14.73\,\text{Psia}}\right) \times 1,000\,\frac{\text{Btu}}{\text{ft.}^3} = 1,205,100\,\text{Btuh}$

$\frac{3,600\,\frac{sec.}{hr.}}{20\,\frac{sec.}{rev.}} \times 5\,\frac{ft.^3}{rev.} \times \left(\frac{5Psig + 14.73Psi}{14.73Psia}\right) \times 1,000\,\frac{Btu}{ft.^3} = 1,205,100\,Btuh$

The correct answer is: 1,205,000 Btuh

Flag question

Question text

An appliance is clocked on a 2 Psi meter set without correcting for the pressure. The result will be:

Select one:

a.
the appliance will appear to be underfired

b.
the appliance clocked input will be correct

c.
the appliance will appear to be overfired

d.
there is no need to clock any appliance if 2 Psi gas is used

Feedback

Your answer is incorrect.

The correct answer is: the appliance will appear to be underfired

A direct-operated gas regulator designed for an outdoor installation should have the vent opening in what position?

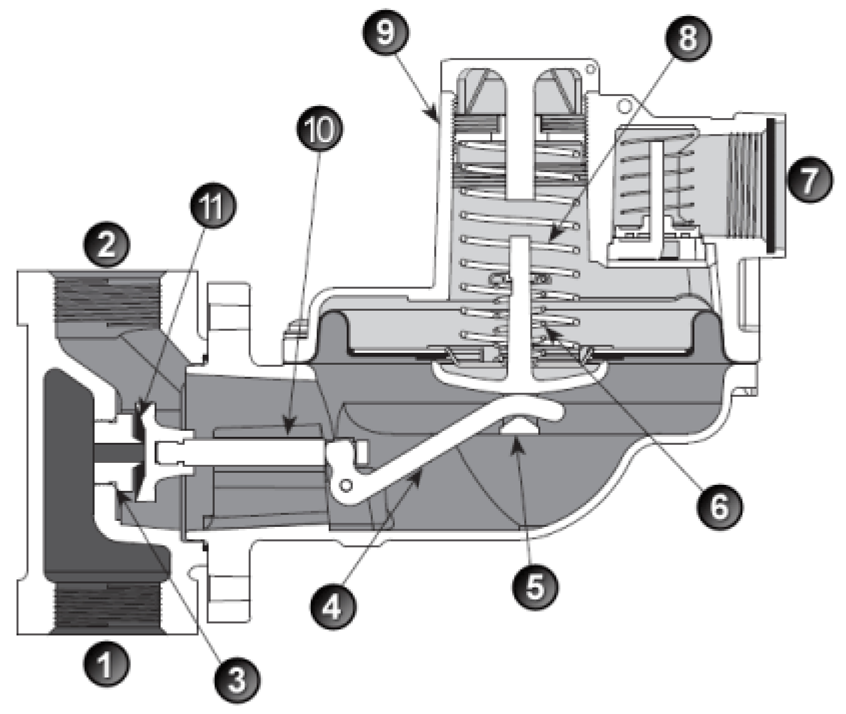
Select one:
Opening pointing down
Screened opening pointing downward
Screened opening pointing in a horizontal position to a safe location
Piped away to a safe location, pointing upward

Feedback

Your answer is incorrect.

The correct answer is: Screened opening pointing downward

Question text



Select the correct components from the above illustration :

Select one:
#2 – inlet
#7 – gas outlet
#8 – relief valve spring
#11 – valve disk

Feedback

Your answer is incorrect.

The correct answer is: #11 – valve disk

Question **3**
Not answered
Marked out of 1.00
Flag question

Question text

Referring to the illustration above , select the correct component :

Select one:
#6 – relief valve spring
#3 – valve disk
#11 – balancing diaphragm
#4 – pitot tube

Feedback

Your answer is incorrect.

The correct answer is: #6 – relief valve spring

Referring to the illustration above , arrow #8 indicates :

Select one:
loading element
diaphragm
measuring element
inlet pressure control spring

Feedback

Your answer is incorrect.

The correct answer is: loading element

Question text

An undersized vent pipe on a regulator may cause the :

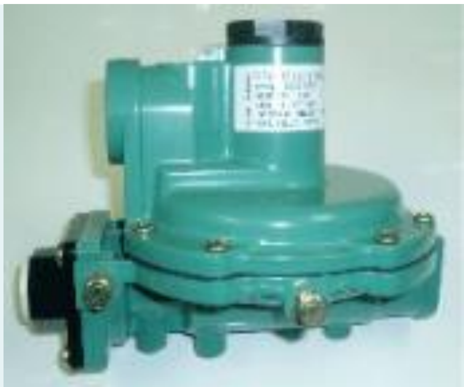
Select one:
a.
restricting element to say fully closed
b.
regulator to go into a hunting condition
c.
restricting element to stay fully open
d.
pilot safety to fail

Feedback

Your answer is incorrect.

The correct answer is: regulator to go into a hunting condition

Question text



What type of regulator is shown in the above illustration?

Select one:
a.
Utility supplied meter regulator, for low pressure
b.
First stage propane regulator
c.
Industrial appliance regulator
d.
Two stage propane regulator

Feedback

Your answer is incorrect.

The correct answer is: Two stage propane regulator

Question text

After an appliance regulator has been put into service there has been a complete blockage on the vent line, this situation would cause the regulator to:

Select one:
a.
Go into a hunting condition
b.
Remain permanently open
c.
Regulate the gas flow at the correct pressure
d.
Remain permanently closed

Feedback

Your answer is incorrect.

The correct answer is: Remain permanently closed

Question text

What is the most common type of appliance regulator found on a residential gas-fired appliance?

Select one:
a.
Poppet Design
b.
Balancing Type
c.
Positive Shut-Off Type
d.
Pilot-Operated

Feedback

Your answer is incorrect.

The correct answer is: Poppet Design

Question text

A type of an appliance regulator that regulates the gas pressure only to the main burner is called:

Select one:
a.
Low Volume Regulator
b.
High Volume Regulator
c.
Low Capacity Regulator
d.
High Capacity Regulator

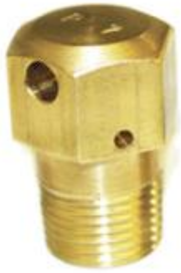
Feedback

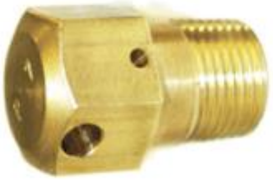
Your answer is incorrect.

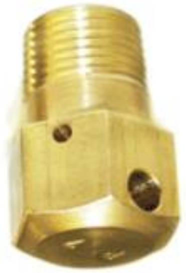
The correct answer is: Low Capacity Regulator

Question text

The leak limiting device shown below must be installed :


A


B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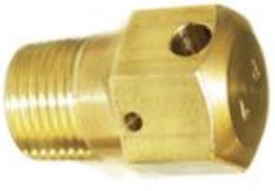

D

Select one:
as in A
as in B
as in C
as in D

Feedback

Your answer is incorrect.

The correct answer is: as in A

Question text

When venting a 5 PSIG gas regulator with internal relief the vent tapping is 3/4-inch and the vent line must run 165 feet, what size is the vent line if the manufacturer's literature is not provided?

Select one:
a.
Use 1 1/2-inch pipe for the entire length – make the change at the vent tapping
b.
Use 3/4 inch pipe for the first 50 feet, then increase to 1 1/2-inch
c.
Use 3/4 inch pipe for the entire length – you may not change sizes
d.
Use 1 1/4-inch pipe for the entire length, make change at the vent tapping

Feedback

Your answer is incorrect.

The correct answer is: Use 1 1/2-inch pipe for the entire length – make the change at the vent tapping

Question text

Too many fittings on a vent line could cause :

Select one:
a.
the restricting element to fully close
b.
the regulator to lock-up
c.
the regulator to hunt

d.
the restricting element to fully open

Feedback

Your answer is incorrect.

The correct answer is: the regulator to hunt

Question text

The purpose of a pitot tube in a regulator is to :

Select one:
a.
relieve unwanted gases when over pressure occurs
b.
increase upstream pressure during static conditions
c.
keep downstream pressure closer to set point during flow conditions
d.
provide mechanical advantage for positive shut-off

Feedback

Your answer is incorrect.

The correct answer is: keep downstream pressure closer to set point during flow conditions

When venting 4 gas regulators (excluding regulators with overpressure relief valves or with internal relief) that are provided with a bleeder vent, what size shall the single vent line be if the bleeder vent openings are 1 inch?

Select one:
a.
2-inch
b.
3-inch
c.
1 1/2-inch
d.
1 1/4-inch

Feedback

Your answer is incorrect.

The correct answer is: 3-inch

Question text

What is the size of a single vent line that will be serving four 3/4-inch overpressure relief valves?

Select one:
a.
1-inch
b.
1 1/4-inch
c.
2-inch
d.
1 1/2-inch

Feedback

Your answer is incorrect.

The correct answer is: 1 1/4-inch

1. Service regulator: on the service line before the meter.

2. Line pressure regulator: between the service and appliance regulator.

3. Appliance regulator: at the appliance.

Cycling, higher lockup, and bathtub stopper effect are all symptoms caused by:

Select one:
A ruptured diaphragm

An over-sized orifice

A weak mechanical linkage

A plugged vent port

Feedback

Your answer is incorrect.

The correct answer is: An over-sized orifice

The correct answer is:

How does a pitot tube improve the accuracy of a regulator?

It senses pressure where the velocity is [highest] and therefore the pressure is [lowest], causing the diaphragm to open the valve more than is needed, boosting the pressure for a split second.

Your answer is correct.

The correct answer is:
What is the benefit associated with lever-type direct-operated regulators?

It has a greater mechanical advantage and therefore a [higher] shutoff force.

The correct answer is:
Define the term “direct-operated” when describing regulators:

The regulator opens and closes in direct response to changes in [downstream] pressure.

Spring rate, diaphragm area, orifice size, and pressure drop are all factors that effect:

Select one:
a.
Orifice flow rate

b.
Droop

c.
Rate of turnover

d.
Cycling

Feedback

Your answer is incorrect.

The correct answer is: Droop

Question text

The restricting element of a regulator is the :

Select one:
a.
Limiting orifice

b.
Valve disc
c.
Diaphragm

d.
Spring

Feedback

Your answer is incorrect.

The correct answer is: Valve disc

Question text

Increasing the spring force in an appliance regulator will :

Select one:
a.
increase the manifold pressure
b.
damage the diaphragm
c.
increase the pilot flame
d.
decrease the manifold pressure

Feedback

Your answer is incorrect.

The correct answer is: increase the manifold pressure

A pressure regulator is said to be in equilibrium when the :

Select one:
a.
opening force of the spring is equal to the closing force of the downstream pressure
b.
opening force of the diaphragm is equal to the closing force of the orifice
c.
opening force of the diaphragm is equal to the closing force of the spring
d.
opening force of the spring is equal to the closing force of the upstream pressure

Feedback

Your answer is incorrect.

The correct answer is: opening force of the spring is equal to the closing force of the downstream pressure

Question text

The loading force in most regulators is provided by the :

Select one:
a.
spring
b.
disc
c.
diaphragm
d.

inlet gas pressure

Feedback

Your answer is incorrect.

The correct answer is: spring

Question text

What are the two most common types of service regulators found on the distribution side of a gas meter?

Select one:
a.
Direct-Operated/Monitoring Design
b.
Direct-Operated/Balancing Operating
c.
Pilot-Operated/Poppet Design

d.
Pilot-Operated/Direct-Operated

Feedback

Your answer is incorrect.

The correct answer is: Pilot-Operated/Direct-Operated

Question text

If a regulator is installed backwards in a piping system what is the most likely result ?

Select one:
a.
No difference – they are non-directional valves
b.
The regulator will open completely
c.
The regulator will close completely
d.
Pressure downstream will rise above set point

Feedback

Your answer is incorrect.

The correct answer is: The regulator will close completely

Question text

When selecting the components of a service regulator, the required downstream pressure will be determined by :

Select one:
a.
loading element
b.
measuring element
c.
body size
d.
restriction element

Feedback

Your answer is incorrect.

The correct answer is: loading element

Question text

The purpose of a pitot tube in a regulator is to :

Select one:
a.
keep downstream pressure closer to set point during flow conditions
b.
relieve unwanted gases when overpressure occurs
c.
provide mechanical advantage for positive shut-off
d.
increase upstream pressure during static conditions

Feedback

Your answer is incorrect.

The correct answer is: keep downstream pressure closer to set point during flow conditions

D.F.M.A's should have what type of fan?

Select one:
a.
Exaust type

b.
Draft

c.
Draw through type

d.
Blower type

Feedback

Your answer is incorrect.

The correct answer is: Draw through type

Question text

How does a D.F.M.A raise the temperature of the incomming outside air, usually?

Select one:

a.
distribution means

b.
indirect means

c.
direct means

d.
industrial means

Feedback

Your answer is incorrect.

The correct answer is: direct means

Question text

What are the two types of DFMAH systems?

Select one:

a.
Direct Compensating / General Area Ventilation

b.
Rooftop / Floor Level

c.
Overhead / Sidewall

d.
Condensing / Conventional

Feedback

Your answer is incorrect.

The correct answer is: Direct Compensating / General Area Ventilation

Question text

What type of burner is used in a DFMAH unit?

Select one:

a.

Raw Gas Burner

b.
Flame Retention Burner

c.
Infinity Burner

d.
Nozzle Type Burner

Feedback

Your answer is incorrect.

The correct answer is: Raw Gas Burner

Question text

What is the maximum outlet temperature of a DFMAH?

Select one:
a.
170 degrees F

b.
There is no maximum temperature

c.
70 degrees F

d.
70 degrees C

Feedback

Your answer is incorrect.

The correct answer is: 70 degrees F

Question text

What category of air is utilized in the combustion process of the DFMAH?

Select one:
a.
100% Primary air

b.
50 /50 Primary & Secondary air

c.
100% Dilution air

d.

100% Secondary air

Feedback

Your answer is incorrect.

The correct answer is: 100% Secondary air

Question text

In occupied spaces what is the maximum concentration amount of CO2 that is permitted by health and safetey regulations?

Select one:
a.
2000 PPM

b.
1500 PPM

c.
2500 PPM

d.
1000 PPM

Feedback

Your answer is incorrect.

The correct answer is: 2500 PPM

Question text

What is the maximum allowable time limit for a low volume DFMAH gas valve to close in the event of flame failure?

Select one:
a.
9 seconds

b.
No maximum

c.
20 seconds

d.
4 seconds

Feedback

Your answer is incorrect.

The correct answer is: 9 seconds

What is the installation clearance of the unit heater described, from the access panel?

Select one:
a.
6"

b.
12"

c.
1"

d.
18"

Feedback

Your answer is incorrect.

The correct answer is: 18"

Question text

An air handling unit saves energy at night by doing which of the following?

Select one or more:
a.
Locks out power supply.

b.
Operates the supply fan only on thermostat demand.

c.
Switches to 24 VAC power only.

d.
Closes outdoor air dampers.

Feedback

Your answer is incorrect.

The correct answers are: Closes outdoor air dampers., Operates the supply fan only on thermostat demand.

Question text

In the model identification number for an air handling unit what do the numbers "060" represent?

Select one:
a.
Refrigerant type

b.

Design sequence

c.
Heating type

d.
Tons - cooling capacity

Feedback

Your answer is incorrect.

The correct answer is: Tons - cooling capacity

What are the two primary classifications of boilers?

Select one:
a.
Single stage and two stage

b.
Water tube and counter flow

c.
Fire tube and single stage

d.
Water tube and fire tube

Feedback

Your answer is incorrect.

The correct answer is: Water tube and fire tube

Flag question

Question text

In a hot water cast iron sectional boiler, what is the maximum pressure?

Select one:
a.
15 PSIG

b.
30 PSIG

c.
50 PSIG

d.
20 PSIG

Feedback

Your answer is incorrect.

The correct answer is: 30 PSIG

Question text

Why are cast iron sectional boilers advantageous?

Select one:
a.
they weigh less than a copper water tube

b.
they can be assembled on site

c.
they are cheaper

d.
they can handle higher pressures than a copper tube

Feedback

Your answer is incorrect.

The correct answer is: they can be assembled on site

Question text

What is a disadvantage to a cast iron sectional boiler?

Select one:
a.
They contain large volumes of water

b.
Assembled in sections

c.
Prone to leakage from the gaskets

d.
There are no disadvantages

Feedback

Your answer is incorrect.

The correct answer is: Prone to leakage from the gaskets

Question text

Fire tube and cast iron boilers are classified as what type?

Select one:
a.

High mass

b.
High differential

c.
High pressure

d.
Low mass

Feedback

Your answer is incorrect.

The correct answer is: High mass

Question text

Dry base boilers are allowed to be installed on flooring that is combustable.

Select one:
True
False

Feedback

The correct answer is 'False'.

Flag question

Question text

Fin-tube type boilers are designed for which application?

Select one:
a.
Residential

b.
Residential and light commercial

c.
Industrial and institutional

d.
Commercial

Feedback

Your answer is incorrect.

The correct answer is: Residential and light commercial

Question text

Fin-tube boilers use what type of heat exchangers?

Select one:
a.
Cast iron

b.
Steel only

c.
Copper only

d.
Copper or steel

Feedback

Your answer is incorrect.

The correct answer is: Copper or steel

Question text

What is the piping material used when potable water is transported throught the system?

Select one:
a.
Copper

b.
Cast iron

c.
Galvanized

d.
Steel

Feedback

Your answer is incorrect.

The correct answer is: Copper

What section of the ASME boiler and pressure vessel code applies to potable water heaters?

Select one:
a.
Nine

b.
Four

c.
Three

Feedback

Your answer is incorrect.

The correct answer is: Four

Question text

Low pressure boilers are limited to a maximum working pressure of?

Select one:
a.
160 PSIG steam

b.
15 PSIG steam

c.
15 PSIG water

d.
30 PSIG steam

Feedback

Your answer is incorrect.

The correct answer is: 15 PSIG steam

Question text

Hot water boilers are limited to what temperature?

Select one:
a.
212 degrees Farenheit

b.
250 degrees Farenheit

c.
250 degrees Celcius

d.
100 degrees Celcius

Feedback

Your answer is incorrect.

The correct answer is: 250 degrees Farenheit

Question text

The natural buoyancy of hot gasses to exhaust combustion products up the boiler vent and draw fresh air into the combustion chamber, is known as?

Select one:

a.
Power vented

b.
Natural draft

c.
Induced draft

d.
Forced draft

Feedback

Your answer is incorrect.

The correct answer is: Natural draft

Flag question

Question text

What are two types of mechanical draft?

Select one:
a.
Combustion and buoyancy

b.
Forced and induced

c.
Positive and forced

d.
Pressure and draw

Feedback

Your answer is incorrect.

The correct answer is: Forced and induced

Question text

The flue gas temperature is 230 degrees farenheit, what type of BH vent would be used?

Select one:
a.
Class 2D

b.
Class 2A

c.
Class 2C

d.
Class 2C, class 2D

Feedback

Your answer is incorrect.

The correct answer is: Class 2C, class 2D

When the venting system is positve pressure what must be done to the joints in the venting line?

Select one:
a.
Create openings in vent pipe to relieve pressure

b.
Change the type of venting to SS

c.
Insulate the vent pipe

d.
Seal the joints

Feedback

Your answer is incorrect.

The correct answer is: Seal the joints

Question text

When water turns to steam how much does it expand approximately?

Select one:
a.
2 times

b.
100 times

c.
1700 times

d.
2500 times

Feedback

Your answer is incorrect.

The correct answer is: 1700 times

What are the three basic designs of gas fired fireplaces?

Select all that apply.

The correct answers are: Insert, Zero-clearance, Free-standing\

Venting for natural draft fireplaces is typically what type of venting?

Select one:

a.
C vent

b.
S636 Venting

c.
A vent

d.
B vent

Feedback

Your answer is incorrect.

The correct answer is: B vent

Question text

What is the standard used to assure that the safety and efficiency of a fireplaces?

Select one:

a.
P.4.1-02

b.
65

c.
NFPA 54

d.
B 149.1

Feedback

Your answer is incorrect.

The correct answer is: P.4.1-02

Question text

How much more heat will a high-efficiency fireplace operating at 70% produce over a non high efficiency fireplace operating at 35%? Both with the same Btuh rating.

Select one:
a.
They are equal

b.
35%

c.
70%

d.
100%

Feedback

Your answer is incorrect.

The correct answer is: 100%

Question text

What would be the common voltage required for a fire places that utilizes an electronic ignition instead of a continuous pilot to light the main burner?

Select one:
a.
240 Volts

b.
24 Volts

c.
30 Volts

d.
120 Volts

Feedback

Your answer is incorrect.

The correct answer is: 24 Volts

How is cold water directed to the bottom of the hot water tank?

Select one:
a.
By the use of an up fed pipe.

b.
By the use of a dip tube.

c.
By use of a thermostatic mixing valve.

d.
By use of a diversion valve.

Feedback

Your answer is incorrect.

The correct answer is: By the use of a dip tube.

Question text

What is the term used to describe the amount of hot water a tank can produce per hour at a given temperature rise?

Select one:
a.
Recovery Rate

b.
Heating Capacity

c.
Full Time

d.
Rate of turn over

Feedback

Your answer is incorrect.

The correct answer is: Recovery Rate

Question text

What is the purpose of a TCO?

Select one:
a.
To shut off gas to the main burner and pilot burner if something in the combustion chamber is abnormal.

b.
To shut off gas to the pilot burner only if something in the combustion chamber is abnormal.

c.
To shut off gas to the main burner only, if something in the combustion chamber is abnormal.

d.
To shut off the water supply if something in the combustion chamber is abnormal.

Feedback

Your answer is incorrect.

The correct answer is: To shut off gas to the main burner and pilot burner if something in the combustion chamber is abnormal.

Question text

What does the abbreviation ECO stand for?

Select one:
a.
Economy Mode

b.
Emergency Cut Out

c.
Electronic Ignition Cut Out

d.
Energy Cut Off

Feedback

Your answer is incorrect.

The correct answer is: Energy Cut Off

Question text

Who certifies S636 Plastic Venting?

Select one:
a.
CSA

b.
ERB

c.
CGA

d.
ULC

Feedback

Your answer is incorrect.

The correct answer is: ULC

Question text

What is the common maximum BTUH rating for residential tankless water heaters?

Select one:

a.
250000 Btuh

b.
200000 Btuh

c.
75000 Btuh

d.
400000 Btuh

Feedback

Your answer is incorrect.

The correct answer is: 200000 Btuh

Question text

What do the letters FVS stand for?

Select one:
a.
Friction Velocity Sensor

b.
Full Volume Sensor

c.
Feed Water Velocity Sensor

d.
Flammable Vapor Sensor

Feedback

Your answer is incorrect.

The correct answer is: Flammable Vapor Sensor

Which category of furnace is considered 80 - 90% efficient?

Select one:
a.
None

b.
Mid Efficiency

c.
Low Efficiency

d.
High Efficiency

Feedback

Your answer is incorrect.

The correct answer is: Mid Efficiency

Question text

For every pound liquid condensed from the flue gases. Approximately how many BTU's does the unit absorb?

Select one:
a.
1000

b.
1700

c.
144

d.
970

Feedback

Your answer is incorrect.

The correct answer is: 970

Question text

For high efficiency furnaces operating with positive vent pressures and lower flue gas temperatures. What type of venting in commonly used?

Select one:
a.
Type BH

b.
Type L

c.
Type B

d.
Type BW

Feedback

Your answer is incorrect.

The correct answer is: Type BH

Question text

For practical purposes. What is the main function of the control module?

Choose all that are correct.

Select one or more:

a.
Maintain the standing pilot

b.
Initiate the ignition sequence

c.
Perform shut down sequence

d.
Control the run cycle

e.
Detect the type of gas

Feedback

Your answer is incorrect.

The correct answers are: Initiate the ignition sequence, Control the run cycle, Perform shut down sequence

What is the maximum operation temperature and pressure of a low-temperature hot water boiler?

Select one:

a.
120 °C (250 °F), 1,100 kPa (160 PSIG) or conventional cast iron 207 kPa (30 PSIG)

b.
80 °C (176 °F), 1,100 kPa (160 PSIG) or conventional cast iron 207 kPa (30 PSIG)

c.
100 °C (212 °F), 1,100 kPa (160 PSIG) or conventional cast iron 207 kPa (30 PSIG)

d.
125 °C (257 °F), 1,100 kPa (160 PSIG) or conventional cast iron 207 kPa (30 PSIG)

Feedback

Your answer is incorrect.

The correct answer is: 120 °C (250 °F), 1,100 kPa (160 PSIG) or conventional cast iron 207 kPa (30 PSIG)

Question **2**

Not answered

Marked out of 1.00

Flag question

Question text

How are low-temperature boilers usually rated?

Select one:

a.

Net rated in Btu/Hr. or EDR

b.

Net rated in MBH or BHP

c.

Net rated in Btu/Hr. or BHP

d.

Net rated in BHP or EDR

Feedback

Your answer is incorrect.

The correct answer is: Net rated in Btu/Hr. or EDR

Question **3**

Not answered

Marked out of 1.00

Flag question

Question text

Which of the following is a definition of net rating ?

Select one:

a.

Amount of heat lost to transmission losses

b.

Amount of heat energy available at the boiler outlet

c.

Amount of heat energy consumed by the boiler

d.

Amount of heat energy available at the heat transfer units

Feedback

Your answer is incorrect.

The correct answer is: Amount of heat energy available at the heat transfer units

Question **4**

Not answered

Marked out of 1.00

Flag question

Question text

What is the Btu value of an EDR?

Select one:
a.
Steam 240 Btu/Hr., hot water 150 Btu/Hr

b.
Steam 250 Btu/Hr., hot water 120 Btu/Hr

c.
Steam 150 Btu/Hr., hot water 240 Btu/Hr

d.
Steam 120 Btu/Hr., hot water 250 Btu/Hr.

Feedback

Your answer is incorrect.

The correct answer is: Steam 240 Btu/Hr., hot water 150 Btu/Hr

Question **5**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following is a definition of boiler input?

Select one:
a.
The amount of heat energy consumed by the heat transfer units

b.
The amount of heat energy consumed by transmission losses

c.
The amount of energy lost through stack and jacket losses

d.
The amount of energy consumed by the boiler

Feedback

Your answer is incorrect.

The correct answer is: The amount of energy consumed by the boiler

Question **6**
Not answered
Marked out of 1.00
Flag question

Question text

What problems can occur in a conventional boiler if the flue gases are cooled to their dew point?

Select one:

a.
Draft hood spillage or damage caused by corrosive condensate

b.
Excessive heat damage to the heat exchanger and draft hood

c.
Increased carbon monoxide and nitrous oxide emissions

d.
Excessive fuel consumption and decreased heat output

Feedback

Your answer is incorrect.

The correct answer is: Draft hood spillage or damage caused by corrosive condensate

Question **7**

Not answered
Marked out of 1.00
Flag question

Question text

Which of the following could be classified as a high-mass boiler?

Select one:

a.
Steel water tube boiler

b.
Copper tube boiler

c.
Cast iron sectional boiler

d.
Copper tube boiler for domestic water supply

Feedback

Your answer is incorrect.

The correct answer is: Cast iron sectional boiler

Question **8**

Not answered
Marked out of 1.00

Flag question

Question text

What code covers the fabrication, installation and inspection of boilers?

Select one:

a.
ASME code

b.
NBC code

c.
ASTM code

d.
CSA code

Feedback

Your answer is incorrect.

The correct answer is: ASME code

Question **9**

Not answered

Marked out of 1.00

Flag question

Question text

Which of the following hot water boilers can be used to directly heat domestic water?

Select one:

a.
Cast iron sectional

b.
Steel fire tube

c.
Cast iron condensing

d.
Copper water tube

Feedback

Your answer is incorrect.

The correct answer is: Copper water tube

Question **10**

Not answered

Marked out of 1.00

Flag question

Question text

What classification could be used to describe a fire tube boiler?

Select one:

a.
Copper tube

b.
High mass

c.
Sectional

d.
Low mass

Feedback

Your answer is incorrect.

The correct answer is: High mass

Question **11**

Not answered
Marked out of 1.00
Flag question

Question text

What can cause coil damage in a low-mass boiler?

Select one:

a.
High return water temperature

b.
Low or no flow through the heat exchanger

c.
Limit control set too high

d.
A carbonizing flame

Feedback

Your answer is incorrect.

The correct answer is: Low or no flow through the heat exchanger

Question **12**

Not answered
Marked out of 1.00

Flag question

Question text

What material is commonly used to construct sectional boilers ?

Select one:

a.
Cast iron

b.
Stainless Steel

c.
Copper

d.
Steel

Feedback

Your answer is incorrect.

The correct answer is: Cast iron

Question **13**

Not answered

Marked out of 1.00

Flag question

Question text

What is the purpose of a safety relief valve?

Select one:

a.
To remove air and other gases from the system

b.
To protect the boiler and system from excess pressure

c.
To set the static pressure within the system

d.
To close the gas valve in high-temperature conditions

Feedback

Your answer is incorrect.

The correct answer is: To protect the boiler and system from excess pressure

Question **14**

Not answered

Marked out of 1.00

Flag question

Question text

What is the purpose of a boiler operating control?

Select one:

a.

To maintain flow through the heat exchanger

b.

To control the normal temperature range of a boiler

c.

To remove air from the boiler

d.

To control room temperature

Feedback

Your answer is incorrect.

The correct answer is: To control the normal temperature range of a boiler

Question **15**

Not answered

Marked out of 1.00

Flag question

Question text

What device protects the boiler from excessive temperature?

Select one:

a.

Limit Control

b.

Automatic air vents

c.

Pressure reducing valves

d.

Expansion tank

Feedback

Your answer is incorrect.

The correct answer is: Limit Control

Question **16**

Not answered

Marked out of 1.00

Flag question

Question text

What mandatory device is required on a coil type boiler over 400,000 Btu/hr?

Select one:
a.
Flow switch

b.
Thermostat

c.
Indoor-outdoor control

d.
Flow control valve

Feedback

Your answer is incorrect.

The correct answer is: Flow switch

Question **17**
Not answered
Marked out of 1.00
Flag question

Question text

What device can be installed to protect a hot water boiler from a low water level?

Select one:
a.
Thermostat

b.
Safety relief valve

c.
Probe type cut-off

d.
Limit control

Feedback

Your answer is incorrect.

The correct answer is: Probe type cut-off

Question **18**

Not answered

Marked out of 1.00

Flag question

Question text

What device compensates for the normal expansion and contraction of the water in a hot water boiler?

Select one:

a.

Flow switch

b.

Line scoop

c.

Diaphragm tank

d.

Operating control

Feedback

Your answer is incorrect.

The correct answer is: Diaphragm tank

Question **19**

Not answered

Marked out of 1.00

Flag question

Question text

Which device separates air from the water leaving a firetube boiler?

Select one:

a.

Manual air vent

b.

Boiler fitting

c.

Pressure reducing valve

d.

Cushion tank

Feedback

Your answer is incorrect.

The correct answer is: Boiler fitting

Question **20**

Not answered

Marked out of 1.00

Flag question

Question text

What device is used to maintain a minimum pressure within a system?

Select one:

a.
Automatic air vent

b.
Safety relief valve

c.
Pressure reducing valve

d.
Expansion tank

Feedback

Your answer is incorrect.

The correct answer is: Pressure reducing valve

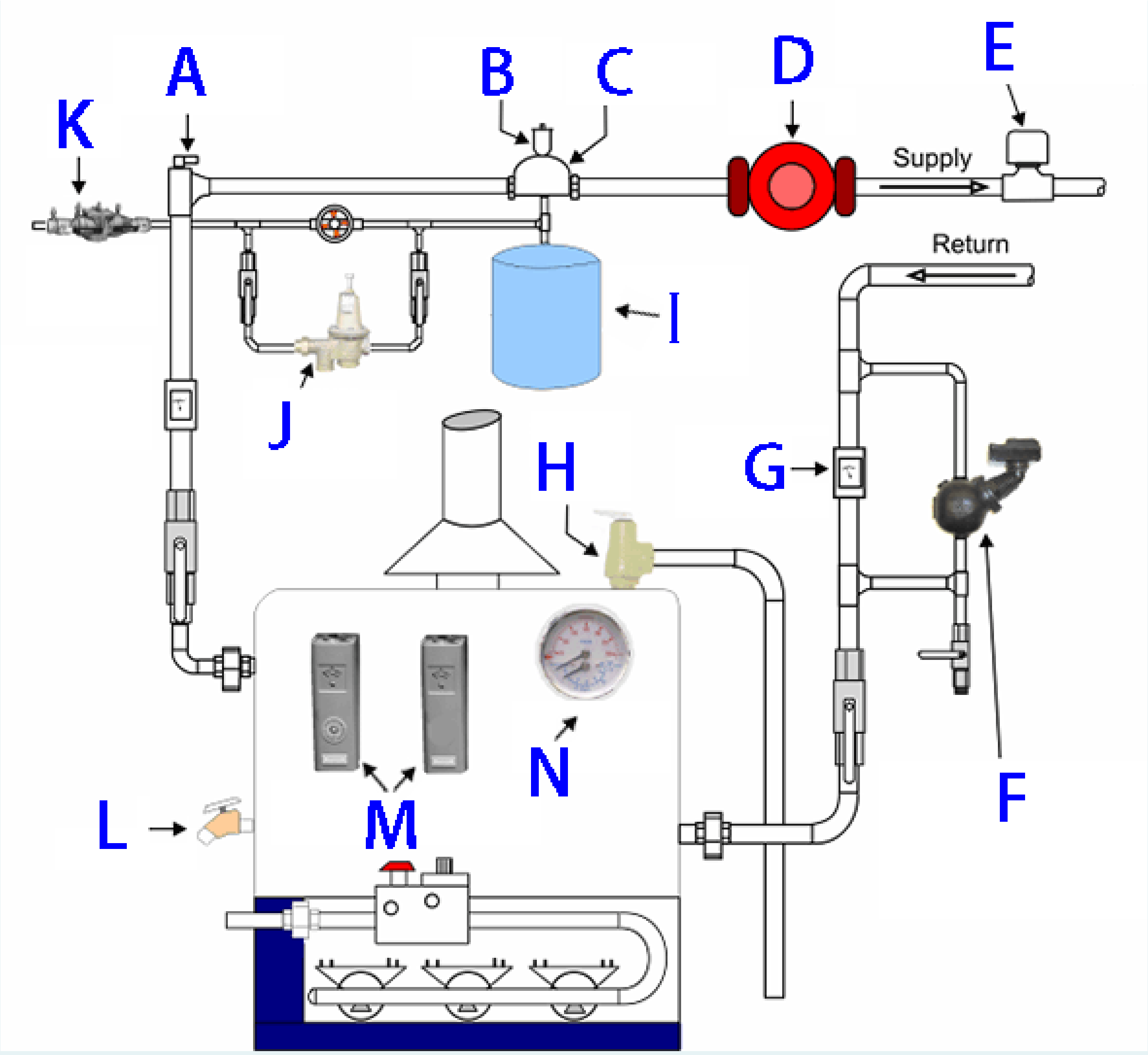
Question **21**

Not answered

Marked out of 1.00

Flag question

Question text



What is Item “C” in image ?

Select one:

a.
Safety relief valve

b.
Line scoop

c.
Automatic air vent

d.
Boiler scoop

Feedback

Your answer is incorrect.

The correct answer is: Line scoop

Question **22**
Not answered
Marked out of 1.00
Flag question

Question text

What is Item “J” in above image ?

Select one:
a.
Pressure reducing valve

b.
Manual air vent

c.
Check Valve

d.
Low water cut off

Feedback

Your answer is incorrect.

The correct answer is: Pressure reducing valve

Question **23**
Not answered
Marked out of 1.00
Flag question

Question text

What is Item “N” in above image ?

Select one:
a.
Operating control

b.
Circulator

c.
Limit control

d.

Combination gauge

Feedback

Your answer is incorrect.

The correct answer is: Combination gauge

Question **24**
Not answered
Marked out of 1.00
Flag question

Question text

What is Item “I” in above image ?

Select one:
a.
Low water cut off

b.
Line scoop

c.
Circulator

d.
Diaphragm tank

Feedback

Your answer is incorrect.

The correct answer is: Diaphragm tank

Question **25**
Not answered
Marked out of 1.00
Flag question

Question text

What is Item “K” in the above image ?

Select one:
a.
Boiler drain

b.
Pressure reducing valve

c.
Temperature gauge

d.

Backflow preventer

Feedback

Your answer is incorrect.

The correct answer is: Backflow preventer

Question **26**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item “E” in the above image ?

Select one:

a.

Low water cut off

b.

Circulator

c.

Flow switch

d.

Flow control valve

Feedback

Your answer is incorrect.

The correct answer is: Flow switch

Question **27**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item “F” in the above image ?

Select one:

a.

Pop safety valve

b.

Low water cut off

c.
Blow off valve

d.
Pressure control

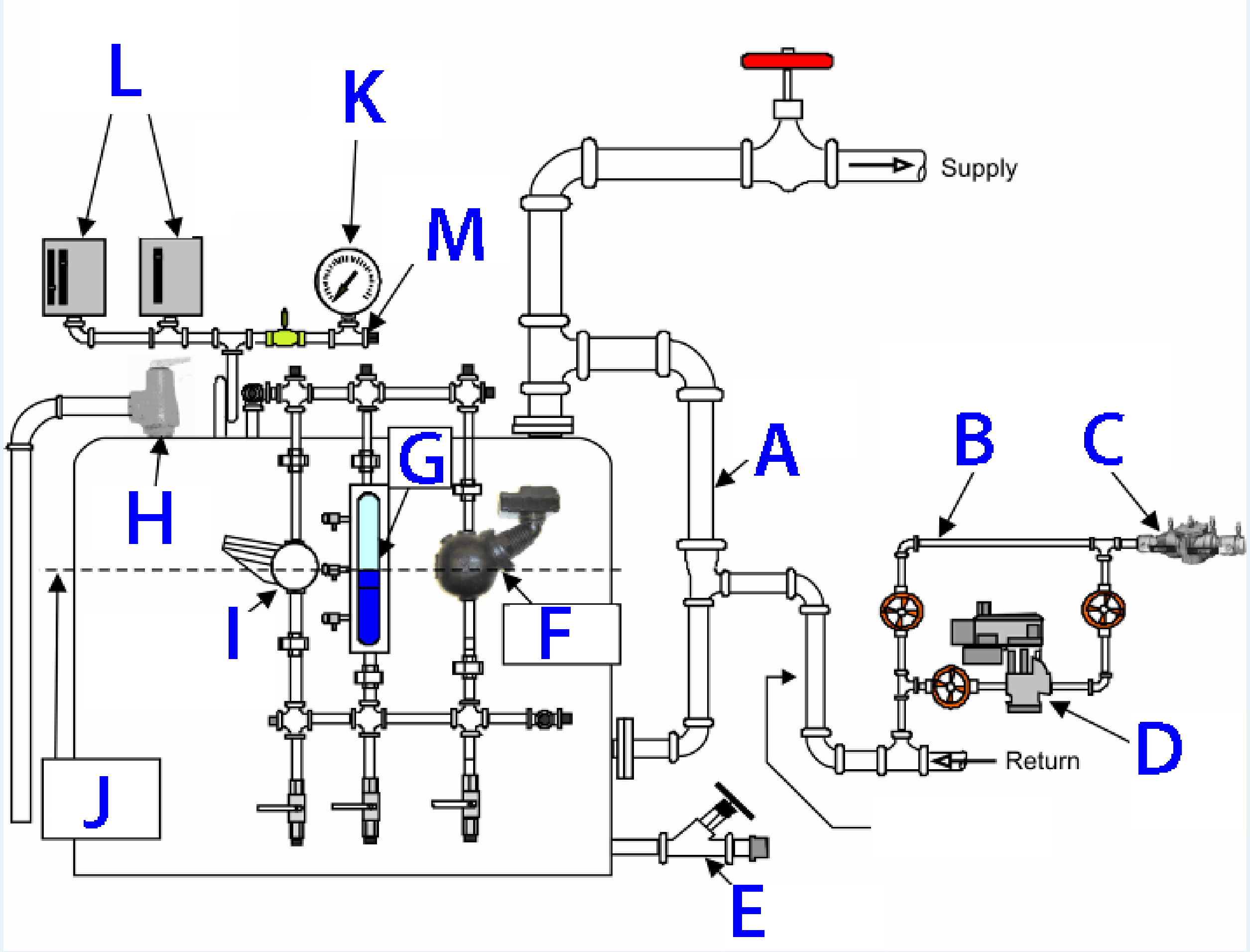
Feedback

Your answer is incorrect.

The correct answer is: Low water cut off

Question **28**
Not answered
Marked out of 1.00
Flag question

Question text



What is Item “L” in the image ?

Select one:
a.
Temperature controls

b.
Flow level controls

c.
Inspector’s test gauges

d.
Pressure controls

Feedback

Your answer is incorrect.

The correct answer is: Pressure controls

Question **29**
Not answered
Marked out of 1.00
Flag question

Question text

What is Item “G” in the above image ?

Select one:
a.
Sight glass

b.
Low water cut off

c.
Automatic water feeder

d.
Equalizer line

Feedback

Your answer is incorrect.

The correct answer is: Sight glass

Question **30**
Not answered
Marked out of 1.00
Flag question

Question text

What is Item “J” in the above image ?

Select one:

a.

Equalizer piping connection

b.

Top of heat exchanger

c.

Normal operating water level

d.

Blowoff valve location

Feedback

Your answer is incorrect.

The correct answer is: Normal operating water level

Question **31**

Not answered

Marked out of 1.00

Flag question

Question text

Which one of the following items would you find on a hot water boiler?

Select one:

a.

Pressure operating control

b.

Expansion Tank

c.

Sight glass

d.

Equalizer line

Feedback

Your answer is incorrect.

The correct answer is: Expansion Tank

Question **32**

Not answered

Marked out of 1.00

Flag question

Question text

Which one of the following items would indicate that you are looking at a hot water boiler and not a steam boiler?

Select one:

a.
Makeup water line

b.
Backflow preventer

c.
Pressure reducing valve

d.
Pressure operating control

Feedback

Your answer is incorrect.

The correct answer is: Pressure reducing valve

Question **33**

Not answered

Marked out of 1.00

Flag question

Question text

Which one of the following items would you find on a steam boiler?

Select one:

a.
Flow swtich

b.
Diaphragm tank

c.
Sight glass

d.
Line scoop

Feedback

Your answer is incorrect.

The correct answer is: Sight glass

Which of the following piping materials are suitable for hot water heating ?

Select one:

a.
Steel pipe, DWV copper tube, PB tubing

b.
Steel pipe, Type “M” copper tube, PVC tubing

c.
Steel pipe, Type “L” copper tube, ABS tubing

d.
Steel pipe, Type “M” copper tube, PEX tubing

Feedback

Your answer is incorrect.

The correct answer is: Steel pipe, Type “M” copper tube, PEX tubing

Question **2**
Not answered
Marked out of 1.00
Flag question

Question text

To what does the term *cross-linked* refer?

Select one:
a.
Reference system for different materials

b.
The exterior coating used on steel piping

c.
Coating that prevents oxidation

d.
Process of manufacturing pipe

Feedback

Your answer is incorrect.

The correct answer is: Process of manufacturing pipe

Question **3**
Not answered
Marked out of 1.00
Flag question

Question text

What is one advantage of using grooved piping and fittings rather than threaded steel pipe and fittings?

Select one:
a.
Requires fewer fittings

b.
Prevents expansion and contraction

c.
Easy to disassemble

d.
Requires fewer pipe hangers

Feedback

Your answer is incorrect.

The correct answer is: Easy to disassemble

Question **4**
Not answered
Marked out of 1.00
Flag question

Question text

What is one advantage of using copper tube rather than threaded steel pipe and fittings?

Select one:
a.
Threads easily

b.
Lower expansion rate

c.
Resists heat transfer

d.
Superior flow characteristics

Feedback

Your answer is incorrect.

The correct answer is: Superior flow characteristics

Question **5**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following copper tube is not approved for hydronic heating?

Select one:
a.
Type L

b.
Type M

c.
Type K

d.
Type DWV

Feedback

Your answer is incorrect.

The correct answer is: Type DWV

Question **6**
Not answered
Marked out of 1.00
Flag question

Question text

What is the name of the piping system in which the heating transfer units are part of the piping?

Select one:
a.
One-pipe

b.
Two-pipe reverse return

c.
Series loop

d.
Two-pipe direct return

Feedback

Your answer is incorrect.

The correct answer is: Series loop

Question **7**
Not answered
Marked out of 1.00
Flag question

Question text

What is the name of the piping system in which the heating transfer units are supplied by specialty tees?

Select one:

a.
Two pipe direct return

b.
Two pipe reverse return

c.
One pipe

d.
Series Loop

Feedback

Your answer is incorrect.

The correct answer is: One pipe

Question **8**

Not answered
Marked out of 1.00
Flag question

Question text

What is the name of the piping system in which the first heat transfer unit supplied is also the first returned?

Select one:

a.
Two-pipe direct return

b.
Two-pipe reverse return

c.
One pipe

d.
Series loop

Feedback

Your answer is incorrect.

The correct answer is: Two-pipe direct return

Question **9**

Not answered

Marked out of 1.00
Flag question

Question text

What is the name of the piping system in which the water has approximately the same distance to travel for each heat transfer unit?

Select one:

a.
Two-pipe direct return

b.
Series Loop

c.
Two-pipe reverse return

d.
One pipe

Feedback

Your answer is incorrect.

The correct answer is: Two-pipe reverse return

Question **10**

Not answered
Marked out of 1.00
Flag question

Question text

What is a major disadvantage of the series loop piping system?

Select one:

a.
Limited heating capacity for each circuit

b.
Equal length circuits

c.
Unsuitable for residential installations

d.
Additional pipe and fittings as compared to other systems

Feedback

Your answer is incorrect.

The correct answer is: Limited heating capacity for each circuit

Question **11**

Not answered

Marked out of 1.00

Flag question

Question text

What is a major disadvantage of a one-pipe system?

Select one:

a.

Heat transfer units cannot be individually controlled

b.

Unsuitable for more than two heat transfer units

c.

Equal length circuits

d.

Last heat transfer units receive cooler water

Feedback

Your answer is incorrect.

The correct answer is: Last heat transfer units receive cooler water

Question **12**

Not answered

Marked out of 1.00

Flag question

Question text

What is the major disadvantage of a two-pipe direct return piping system?

Select one:

a.

Limited to 60 MBH and under

b.

Hard to balance flow to each heat transfer unit

c.

Requires specialty tees

d.

Last heat transfer unit receives coolest water

Feedback

Your answer is incorrect.

The correct answer is: Hard to balance flow to each heat transfer unit

Question **13**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following valves is a good choice for use as an isolation valve?

Select one:
a.
Ball Valve

b.
Check Valve

c.
Needle Valve

d.
Gate Valve

Feedback

Your answer is incorrect.

The correct answer is: Ball Valve

Question **14**
Not answered
Marked out of 1.00
Flag question

Question text

What is the purpose of a balancing valve?

Select one:
a.
To equalize boiler supply temperature and return temperature

b.
To adjust flow rates to each heat transfer unit

c.
To equalize pressure between supply and return header

d.
To prevent unequal length supply and return piping

Feedback

Your answer is incorrect.

The correct answer is: To adjust flow rates to each heat transfer unit

Question **15**
Not answered
Marked out of 1.00
Flag question

Question text

What is the purpose of a wild loop?

Select one:
a.
To maintain reverse pressure on discharge of the circulator

b.
To compensate for unequal supply and return piping lengths

c.
To allow for expansion and contraction

d.
To prevent the pump from deadheading

Feedback

Your answer is incorrect.

The correct answer is: To prevent the pump from deadheading

Question **16**
Not answered
Marked out of 1.00
Flag question

Question text

What type of radiator valve should be installed to prevent unauthorized use?

Select one:
a.
Thermostatic radiator valve

b.
Ball valve

c.
Lockshield radiator valve

d.
Zone valve

Feedback

Your answer is incorrect.

The correct answer is: Lockshield radiator valve

Question **17**

Not answered

Marked out of 1.00

Flag question

Question text

What is the purpose of a zone valve?

Select one:

a.

To balance flow between heat transfer units

b.

To control thermostat output

c.

To provide control of heat emission

d.

To prevent short-circuits

Feedback

Your answer is incorrect.

The correct answer is: To provide control of heat emission

Question **18**

Not answered

Marked out of 1.00

Flag question

Question text

What are the two primary considerations when locating air removal devices?

Select one:

a.

Direction of flow and boiler location

b.

Ease of maintenance and installation

c.

Size and type of piping system

d.

Temperature and pressure

Feedback

Your answer is incorrect.

The correct answer is: Temperature and pressure

Question **19**
Not answered
Marked out of 1.00
Flag question

Question text

Why is it important to remove gases from a hot water heating system?

Select one:

a.
To prevent air binding in the system

b.
To prevent over-pressuring of the system due to expansion

c.
To prevent overheating of the heat transfer units

d.
To prevent convection from occurring

Feedback

Your answer is incorrect.

The correct answer is: To prevent air binding in the system

Question **20**
Not answered
Marked out of 1.00
Flag question

Question text

What device removes gases directly from the boiler ?

Select one:

a.
Manual air vent

b.
Expansion tank

c.
Boiler fitting

d.
Cushion tank

Feedback

Your answer is incorrect.

The correct answer is: Boiler fitting

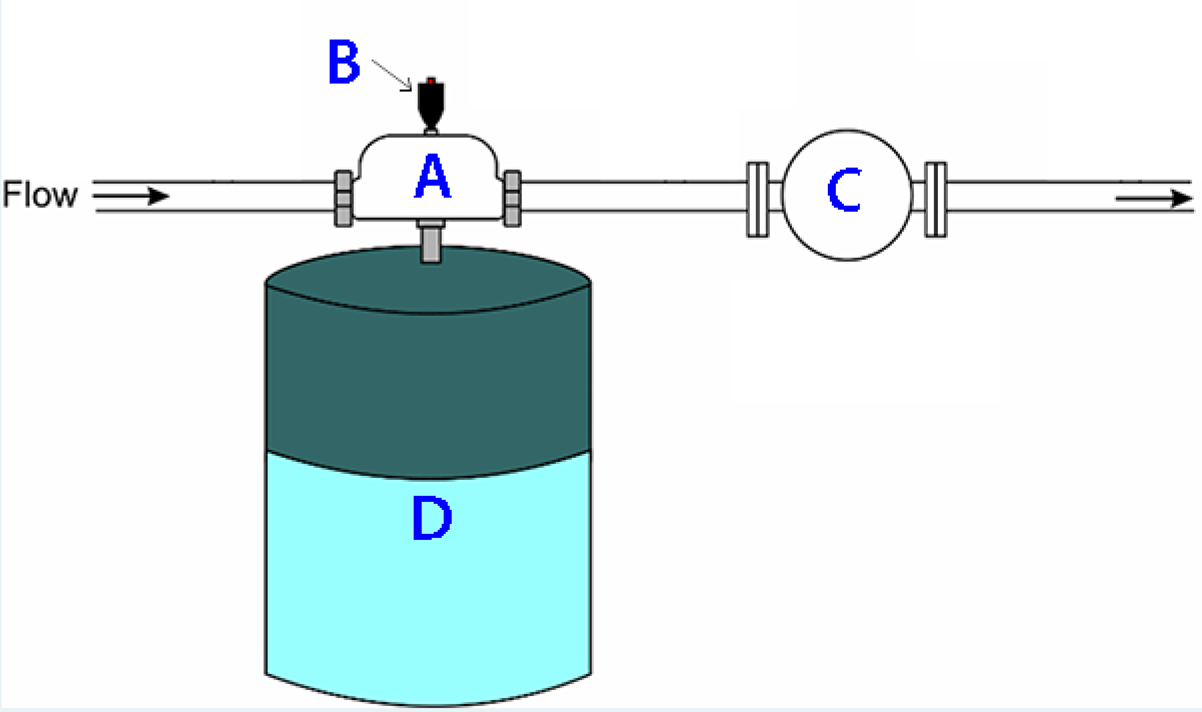
Question **21**

Not answered

Marked out of 1.00

Flag question

Question text



Referring to the above image , what is Item A ?

Select one:

a.
Automatic Air Vent

b.
Line Scoop

c.
A strainer

d.
Boiler Scoop

Feedback

Your answer is incorrect.

The correct answer is: Line Scoop

Question **22**
Not answered
Marked out of 1.00
Flag question

Question text

Referring to the above image , what is Item B ?

Select one:
a.
Manual air vent

b.
Automatic air vent

c.
Make up water fitting
d.
Flow control switch

Feedback

Your answer is incorrect.

The correct answer is: Automatic air vent

Question **23**
Not answered
Marked out of 1.00
Flag question

Question text

Referring to the above image , what is Item C ?

Select one:
a.
Circulator
b.
Flow control switch

c.
Manual air vent

d.
Automatic air vent

Feedback

Your answer is incorrect.

The correct answer is: Circulator

Question **24**

Not answered
Marked out of 1.00
Flag question

Question text

Referring to the above image , what is Item “D”?

Select one:

a.
Circulator

b.
Boiler

c.
Boiler Scoop

d.
Diaphragm tank

Feedback

Your answer is incorrect.

The correct answer is: Diaphragm tank

Question **25**

Not answered
Marked out of 1.00
Flag question

Question text

What part of a circulator transfers energy to the water?

Select one:

a.
Impeller

b.
Volute

c.
Diffuser

d.
Seals

Feedback

Your answer is incorrect.

The correct answer is: Impeller

Question **26**
Not answered
Marked out of 1.00
Flag question

Question text

What function does a circulator provide in a hot water heating system?

Select one:
a.
Moves water within the system

b.
Adds static pressure to the system

c.
Removes air from the system

d.
Balances supply and return pressures

Feedback

Your answer is incorrect.

The correct answer is: Moves water within the system

Question **27**
Not answered
Marked out of 1.00
Flag question

Question text

What two variables do you find on a pump curve?

Select one:
a.
Velocity and flow

b.
Head and flow

c.
Pressure and velocity

d.
Head and velocity

Feedback

Your answer is incorrect.

The correct answer is: Head and flow

Question **28**
Not answered
Marked out of 1.00
Flag question

Question text

Where is the best location for a circulator ?

Select one:
a.
Upstream from the boiler return connection

b.
Downstream from the boiler supply connection

c.
Upstream of the diaphragm tank

d.
Downstream from the diaphragm tank

Feedback

Your answer is incorrect.

The correct answer is: Downstream from the diaphragm tank

Question **29**
Not answered
Marked out of 1.00
Flag question

Question text

What is the purpose of a flow control valve?

Select one:
a.
To balance the flow rates within a hot water heating system

b.
To control make-up water to the boiler

c.
To prevent convection currents in a heating system

d.
To prevent pump from deadheading

Feedback

Your answer is incorrect.

The correct answer is: To prevent convection currents in a heating system

What causes convection currents?

Select one:
a.
Lower air temperatures

b.
The venturi effect

c.
Higher air temperatures

d.
Different air densities

Feedback

Your answer is incorrect.

The correct answer is: Different air densities

Question **2**
Not answered
Marked out of 1.00
Flag question

Question text

What predominant method of heat transfer does finned tube baseboard utilize in heating a room?

Select one:
a.
Fan-assisted

b.
Radiation

c.
Conduction

d.
Convection

Feedback

Your answer is incorrect.

The correct answer is: Convection

Question **3**
Not answered
Marked out of 1.00
Flag question

Question text

Which one of the following heat transfer units produces significant amounts of radiated heat?

Select one:
a.
Free-standing cast iron radiator

b.
Finned tube baseboard

c.
Plate type exchanger

d.
Forced air furnace

Feedback

Your answer is incorrect.

The correct answer is: Free-standing cast iron radiator

Question **4**
Not answered
Marked out of 1.00
Flag question

Question text

What method of heat transfer is utilized by a plate heat exchanger ?

Select one:
a.
Conduction

b.
Fan-assisted

c.
Radiation

d.
Convection

Feedback

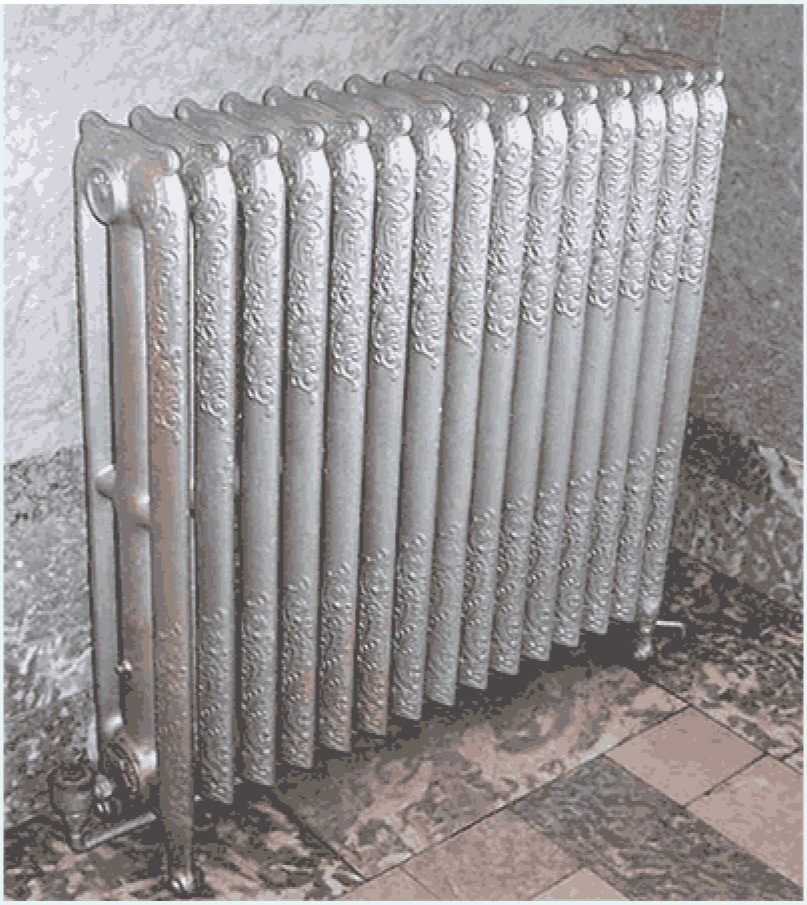
Your answer is incorrect.

The correct answer is: Conduction

Question **5**
Not answered
Marked out of 1.00

Flag question

Question text



What type of heat transfer unit is illustrated in the above image ?

Select one:

a.
Free-standing cast iron radiator

b.
Forced air furnace

c.
Plate type exchanger

d.
Finned tube baseboard

Feedback

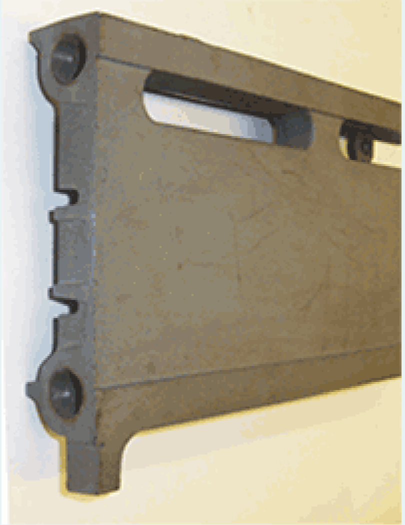
Your answer is incorrect.

The correct answer is: Free-standing cast iron radiator

Question **6**

Not answered
Marked out of 1.00
Flag question

Question text



What type of heat transfer unit is illustrated in the above image?

Select one:
a.
Plate type heat exchanger

b.
Convector

c.
Finned tube baseboard

d.
Cast iron baseboard

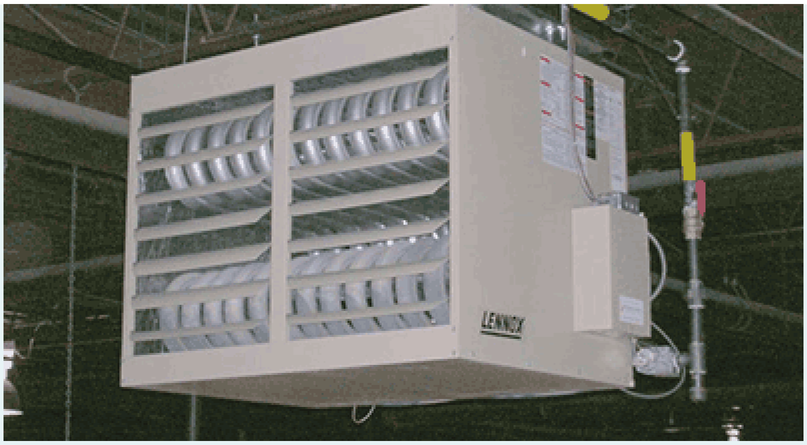
Feedback

Your answer is incorrect.

The correct answer is: Cast iron baseboard

Question **7**
Not answered
Marked out of 1.00
Flag question

Question text



What type of heat transfer unit is illustrated in the above image ?

Select one:

a.
Unit heater

b.
Force flow

c.
Finned tube baseboard

d.
Fin vector

Feedback

Your answer is incorrect.

The correct answer is: Unit heater

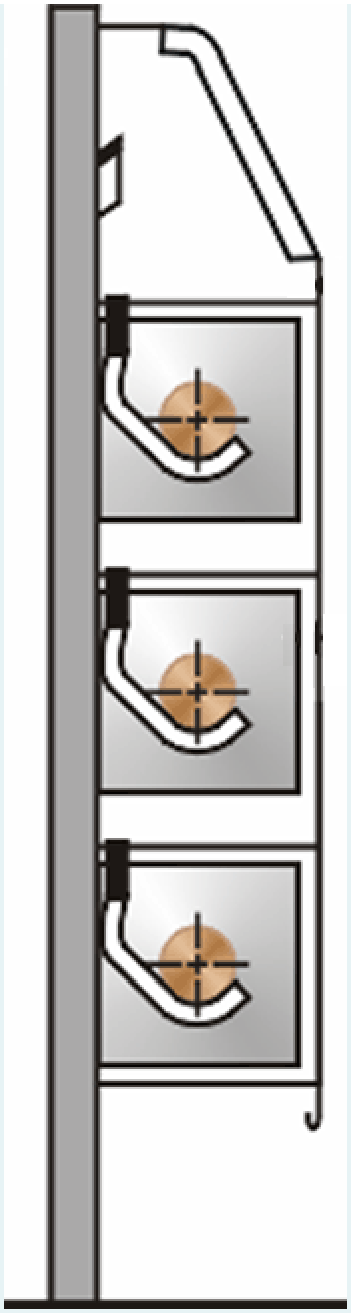
Question **8**

Not answered

Marked out of 1.00

Flag question

Question text



What type of heat transfer unit is illustrated in the above image ?

Select one:

a.
Finned tube baseboard

b.
Unit heater

c.
Convector

d.
Fin vector

Feedback

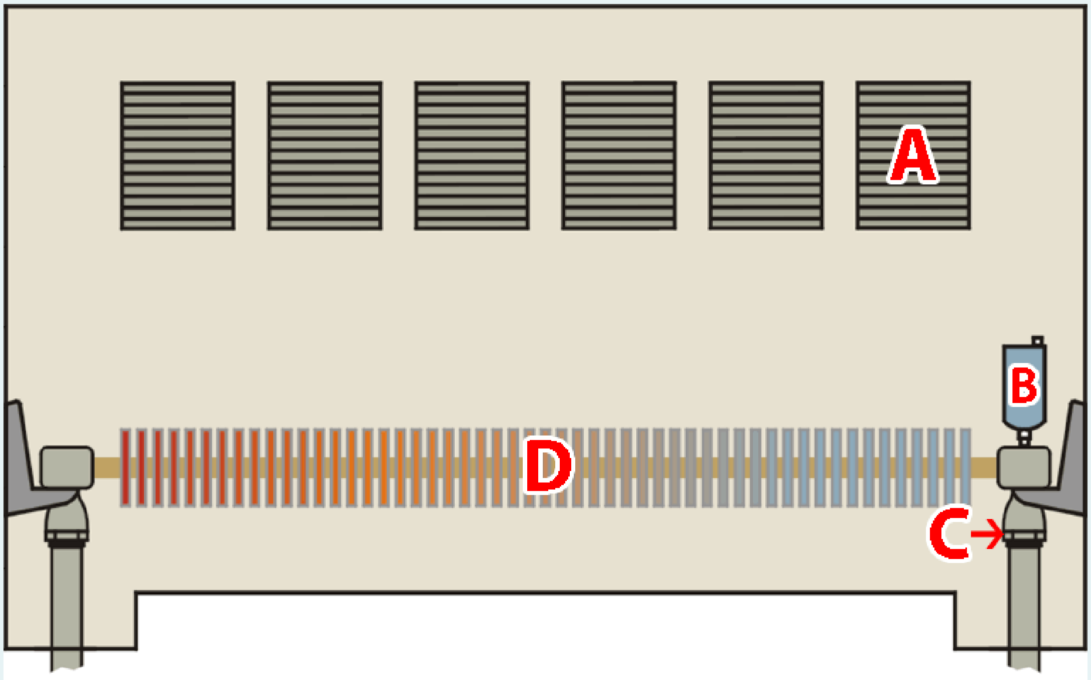
Your answer is incorrect.

The correct answer is: Fin vector

Question **9**

Not answered
Marked out of 1.00
Flag question

Question text



What is Item A in above image ?

Select one:

a.
Heating Element

b.
Damper control

c.
Fan unit

d.

Outlet grill

Feedback

Your answer is incorrect.

The correct answer is: Outlet grill

Question **10**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item B in above image?

Select one:

a.

Valve

b.

Expansion joint

c.

Air Vent

d.

Radiator valve

Feedback

Your answer is incorrect.

The correct answer is: Air Vent

Question **11**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item C in above image ?

Select one:

a.

Valve

b.

Header

c.

Expansion joint

d.

Air vent

Feedback

Your answer is incorrect.

The correct answer is: Header

Question **12**
Not answered
Marked out of 1.00
Flag question

Question text

What is Item D in the above image ?

Select one:
a.
Outlet grill

b.
Heating element

c.
Header

d.
Supply piping

Feedback

Your answer is incorrect.

The correct answer is: Heating element

Question **13**
Not answered
Marked out of 1.00
Flag question

Question text

How is finned tube baseboard rated?

Select one:
a.
Btu per foot per hour based upon supply water temperature, flow rate and entrance air temperature of 65 °F

b.
Btu per foot per hour based upon flow rate and exit air temperature and entrance air temperature

c.

Btu per foot per hour based upon supply water temperature only

d.
Btu per foot per hour based upon supply water temperature, flow rate and exit temperature

Feedback

Your answer is incorrect.

The correct answer is: Btu per foot per hour based upon supply water temperature, flow rate and entrance air temperature of 65 °F

Question **14**
Not answered
Marked out of 1.00
Flag question

Question text

How is the heat output of finned tube baseboard controlled?

Select one:
a.
By adjusting the balancing valve

b.
By opening windows

c.
By closing the isolation valve

d.
By adjusting the damper

Feedback

Your answer is incorrect.

The correct answer is: By adjusting the damper

Question **15**
Not answered
Marked out of 1.00
Flag question

Question text

What length of fin would be required for a room with a heat loss of 11,000 Btu / hr if the fin had an output rating of 550 Btu / ft /hr ?

Select one:
a.
20 feet

b.

18 feet

c.
14 feet

d.
16 feet

Feedback

Your answer is incorrect.

The correct answer is: 20 feet

Question **16**
Not answered
Marked out of 1.00
Flag question

Question text

What effect would raising a fin vector above recommended installation height have on the heat output?

Select one:
a.
Heat output would increase

b.
Heat output would be the same

c.
Supply water temperature would decrease

d.
Heat output would be reduced

Feedback

Your answer is incorrect.

The correct answer is: Heat output would be reduced

What are the maximum operating temperature and pressure of a low-temperature high mass cast iron hot water boiler?

Select one:
a.
125 °C (257 °F) , 207 kPa (30 PSIG)

b.
120 °C (250 °F) , 207 kPa (30 PSIG)

c.

120 °C (250 °F) , 1100 kPa (160 PSIG)

d.
120 °C (212 °F) , 207 kPa (30 PSIG)

Feedback

Your answer is incorrect.

The correct answer is: 120 °C (250 °F) , 207 kPa (30 PSIG)

Question **2**
Not answered
Marked out of 1.00
Flag question

Question text

What is the maximum operating temperature and pressure of a low-temperature low mass copper or steel tube hot water boiler?

Select one:
a.
120 °C (250 °F) , 1100 kPa (160 PSIG)

b.
120 °C (212 °F) , 207 kPa (30 PSIG)

c.
125 °C (257 °F) , 207 kPa (30 PSIG)

d.
120 °C (250 °F) , 207 kPa (30 PSIG)

Feedback

Your answer is incorrect.

The correct answer is: 120 °C (250 °F) , 1100 kPa (160 PSIG)

Question **3**
Not answered
Marked out of 1.00
Flag question

Question text

Low-temperature low pressure hot water boilers are usually rated in:

Select one:
a.
net Btu/hr or BHP

b.
net MBH or BHP

c.
net Btu/hr or EDR

d.
net BHP or EDR

Feedback

Your answer is incorrect.

The correct answer is: net Btu/hr or EDR

Question **4**
Not answered
Marked out of 1.00
Flag question

Question text

The amount of heat energy available at the heat transfer units is defined as:

Select one:
a.
the output rating

b.
the input rating

c.
the transmission loss rating

d.
the net rating

Feedback

Your answer is incorrect.

The correct answer is: the net rating

Question **5**
Not answered
Marked out of 1.00
Flag question

Question text

An EDR has a Btu value of :

Select one:
a.
steam 120 Btu / hr hot water 250 Btu/hr

b.
steam 250 Btu / hr hot water 120 Btu/hr

c.
steam 240 Btu / hr hot water 150 Btu/hr

d.
steam 150 Btu / hr hot water 240 Btu/hr

Feedback

Your answer is incorrect.

The correct answer is: steam 240 Btu / hr hot water 150 Btu/hr

Question **6**
Not answered
Marked out of 1.00
Flag question

Question text

The amount of heat energy consumed by the boiler is defined as :

Select one:
a.
the net rating

b.
the input rating

c.
the output rating

d.
the transmission loss rating

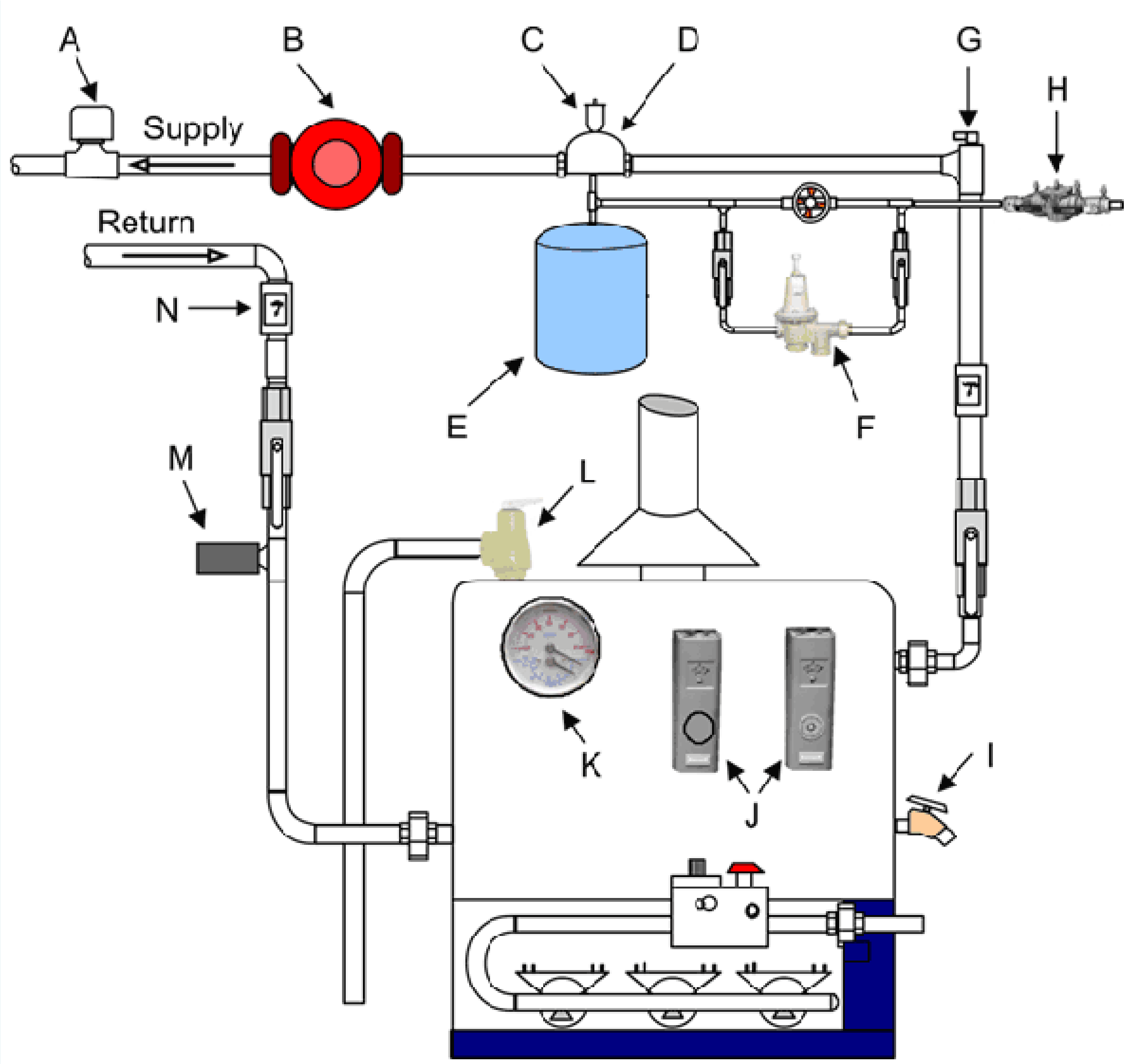
Feedback

Your answer is incorrect.

The correct answer is: the input rating

Question **7**
Not answered
Marked out of 1.00
Flag question

Question text



What is Item C ?

Select one:

a.
Automatic air vent

b.
Boiler scoop

c.
Safety relief valve

d.
Line scoop

Feedback

Your answer is incorrect.

The correct answer is: Automatic air vent

Question **8**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item F ?

Select one:

a.

Manual air vent

b.

Low water cut-off

c.

Pressure reducing valve

d.

Check valve

Feedback

Your answer is incorrect.

The correct answer is: Pressure reducing valve

Question **9**

Not answered

Marked out of 1.00

Flag question

Question text

What is item K ?

Select one:

a.

Circulator

b.

Limit control

c.

Combination gauge

d.

Operating control

Feedback

Your answer is incorrect.

The correct answer is: Combination gauge

Question **10**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item E ?

Select one:

a.

Low water cut-off

b.

Circulator

c.

Scoop

d.

Diaphragm tank

Feedback

Your answer is incorrect.

The correct answer is: Diaphragm tank

Question **11**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item I ?

Select one:

a.

Temperature gauge

b.

Pressure reducing valve

c.

Boiler drain

d.

Backflow preventer

Feedback

Your answer is incorrect.

The correct answer is: Boiler drain

Question **12**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item A ?

Select one:

a.

Flow switch

b.

Flow control valve

c.

Circulator

d.

Low water cut-off

Feedback

Your answer is incorrect.

The correct answer is: Flow switch

Question **13**

Not answered

Marked out of 1.00

Flag question

Question text

What is Item M ?

Select one:

a.

Pressure control

b.

Pop safety valve

c.

Probe-type low water cut-off

d.

Blow-off valve

Feedback

Your answer is incorrect.

The correct answer is: Probe-type low water cut-off

Question **14**

Not answered

Marked out of 1.00

Flag question

Question text

The piping system in which the heat transfer units are a part of the piping system is the:

Select one:

a.

one-pipe

b.

series loop

c.

two-pipe reverse return

d.

two-pipe direct return

Feedback

Your answer is incorrect.

The correct answer is: series loop

Question **15**

Not answered

Marked out of 1.00

Flag question

Question text

The name of the piping system in which the heat transfer units use a specialty tee is a/an:

Select one:

a.

two-pipe direct return

b.

two-pipe reverse return

c.

one-pipe

d.

series loop

Feedback

Your answer is incorrect.

The correct answer is: one-pipe

Question **16**
Not answered
Marked out of 1.00
Flag question

Question text

The name of the piping system in which the first heat transfer unit supplied is also the first returned is the :

Select one:
a.
two-pipe reverse return

b.
two-pipe direct return

c.
one-pipe

d.
series loop

Feedback

Your answer is incorrect.

The correct answer is: two-pipe direct return

Question **17**
Not answered
Marked out of 1.00
Flag question

Question text

The name of the piping system in which the water travels approximately the same distance to each of the heat transfer units is the:

Select one:
a.
one-pipe

b.
two-pipe direct return

c.
series loop

d.
two-pipe reverse return

Feedback

Your answer is incorrect.

The correct answer is: two-pipe reverse return

Question **18**

Not answered

Marked out of 1.00

Flag question

Question text

The major disadvantage of the series loop piping system is that it:

Select one:

a.

is unsuitable for residential installations

b.

has limited heating capacity for each circuit

c.

has equal length circuits

d.

has additional pipe and fittings as compared to other systems

Feedback

Your answer is incorrect.

The correct answer is: has limited heating capacity for each circuit

Question **19**

Not answered

Marked out of 1.00

Flag question

Question text

The purpose of a balancing valve is to:

Select one:

a.

prevent unequal length supply and return piping

b.

adjust flow rates to each heat transfer unit

c.

equalize pressure between supply and return header

d.

equalize boiler supply temperature and return temperature

Feedback

Your answer is incorrect.

The correct answer is: adjust flow rates to each heat transfer unit

Question **20**
Not answered
Marked out of 1.00
Flag question

Question text

The purpose of a wild loop is to:

Select one:
a.
allow for expansion and contraction

b.
prevent the pump from deadheading

c.
maintain reverse pressure on discharge of the circulator

d.
compensate for unequal supply and return piping lengths

Feedback

Your answer is incorrect.

The correct answer is: prevent the pump from deadheading

Question **21**
Not answered
Marked out of 1.00
Flag question

Question text

The type of radiator valve that should be installed to prevent unauthorized use is a :

Select one:
a.
zone valve

b.
ball valve

c.
lockshield radiator valve

d.
thermostatic radiator valve

Feedback

Your answer is incorrect.

The correct answer is: lockshield radiator valve

Question **22**
Not answered
Marked out of 1.00
Flag question

Question text

The purpose of a zone valve is to :

Select one:
a.
control thermostat output

b.
prevent the pump from deadheading

c.
balance flow between heat transfer units

d.
provide control of heat emission

Feedback

Your answer is incorrect.

The correct answer is: provide control of heat emission

Question **23**
Not answered
Marked out of 1.00
Flag question

Question text

The part of a circulator that transfers energy to the water is:

Select one:
a.
the diffuser

b.
the impeller

c.
the seals

d.
the volute

Feedback

Your answer is incorrect.

The correct answer is: the impeller

Question **24**
Not answered
Marked out of 1.00
Flag question

Question text

What is the function of a circulator in a hot water heating system?

Select one:
a.
Adds static pressure to the system

b.
Moves the water within the system

c.
Balances the supply and return pressures

d.
Removes air from the system

Feedback

Your answer is incorrect.

The correct answer is: Moves the water within the system

Question **25**
Not answered
Marked out of 1.00
Flag question

Question text

The two variables you will find on a pump curve are :

Select one:
a.
head and flow

b.
velocity and flow

c.
pressure and velocity

d.
head and velocity

Feedback

Your answer is incorrect.

The correct answer is: head and flow

Question **26**
Not answered
Marked out of 1.00
Flag question

Question text

The best location for the circulator in a hot water heating system is:

Select one:
a.
downstream of the expansion tank

b.
upstream of the boiler return connection

c.
upstream of the expansion tank

d.
downstream of the boiler supply connection

Feedback

Your answer is incorrect.

The correct answer is: downstream of the expansion tank

Question **27**
Not answered
Marked out of 1.00
Flag question

Question text

Finned tube baseboard is rated by what method?

Select one:
a.
Btu per foot per hour based upon supply water temperature, flow rate and exit temperature

b.
Btu per foot per hour based upon flow rate and exit air temperature and entrance air temperature

c.
Btu per foot per hour based upon supply water temperature, flow rate and entrance air temperature of 65 °F

d.
Btu per foot per hour based upon supply water temperature only

Feedback

Your answer is incorrect.

The correct answer is: Btu per foot per hour based upon supply water temperature, flow rate and entrance air temperature of 65 °F

Question **28**
Not answered
Marked out of 1.00
Flag question

Question text

How do you control the heat output of finned tube baseboard ?

Select one:
a.
By adjusting the damper

b.
By adjusting the balancing valve

c.
By opening windows

d.
By closing the isolation valve

Feedback

Your answer is incorrect.

The correct answer is: By adjusting the damper

Question **29**
Not answered
Marked out of 1.00
Flag question

Question text

What is the length of fin that would be required for a room with a heat loss of 8,000 Btu / hr if the fin had an output rating of 450 Btu / ft / hr?

Select one:
a.
14 feet

b.
16 feet

c.
20 feet

d.
18 feet

Feedback

Your answer is incorrect.

The correct answer is: 18 feet

Question **30**
Not answered
Marked out of 1.00
Flag question

Question text

How many pieces of 4′ finned tube are required for above question ?

Select one:
a.
4

b.
6

c.
3

d.
5

Feedback

Your answer is incorrect.

The correct answer is: 5

From the list below, which best defines Btuh ?

Select one:
a.
The rate at which a liquid flows through a pipe

b.
A unit for measuring the rate at which energy travels

c.
A unit for measuring the quantity of water in a system

d.
The measuring units of a thermostat

Feedback

Your answer is incorrect.

The correct answer is: A unit for measuring the rate at which energy travels

Question **2**
Not answered
Marked out of 1.00
Flag question

Question text

What is the best definition of infiltration?

Select one:
a.
Air conducting through a solid object

b.
Airflow inward through openings in the building envelope

c.
Air being drawn up a chimney

d.
Air radiating from a heat transfer unit

Feedback

Your answer is incorrect.

The correct answer is: Airflow inward through openings in the building envelope

Question **3**
Not answered
Marked out of 1.00
Flag question

Question text

What is the ability of oxygen to pass through a material due to the material molecular structure and a difference in oxygen pressure on each side?

Select one:
a.
Oxygen fusion
b.
Oxygen separation

c.
Oxygen fragmentation
d.
Oxygen permeation

Feedback

Your answer is incorrect.

The correct answer is: Oxygen permeation

Question **4**

Not answered

Marked out of 1.00

Flag question

Question text

Which of the following best defines R-value?

Select one:

a.

The ability of a product to conduct heat

b.

The ability of a material to resist heat transfer or flow

c.

The ability to resist transfer of heat through a vacuum

d.

The ability to transfer heat by conduction between solid objects

Feedback

Your answer is incorrect.

The correct answer is: The ability of a material to resist heat transfer or flow

Question **5**

Not answered

Marked out of 1.00

Flag question

Question text

What is a heated area that is regulated by one circulator , control or thermostat ?

Select one:

a.

Reactive control

b.

Thermal mass

c.

Transmission

d.

Zone

Feedback

Your answer is incorrect.

The correct answer is: Zone

Question **6**

Not answered

Marked out of 1.00

Flag question

Question text

How does a forced-air heating system heat a room or space ?

Select one:

a.

By the formation of radiant waves

b.

By heat radiating off of warm objects

c.

From the ceiling down to the floor

d.

The heat radiates to the ceiling from the floor area

Feedback

Your answer is incorrect.

The correct answer is: From the ceiling down to the floor

Question **7**

Not answered

Marked out of 1.00

Flag question

Question text

How does the finned baseboard in a hydronic heating system heat the room?

Select one:

a.

By radiating heat into the room

b.

By conduction only

c.

By evaporation currents

d.

By means of convection

Feedback

Your answer is incorrect.

The correct answer is: By means of convection

Question **8**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following heating systems heats the room from the floor to the ceiling?

Select one:
a.
Forced-air heating

b.
Radiant floor heating

c.
Finned baseboard heating

d.
Gravity heating system

Feedback

Your answer is incorrect.

The correct answer is: Radiant floor heating

Question **9**
Not answered
Marked out of 1.00
Flag question

Question text

From the list below, which system increases the temperature of objects within the room?

Select one:
a.
Forced-air system

b.
Finned baseboard system

c.
Gravity heating system

d.
Radiant floor heating

Feedback

Your answer is incorrect.

The correct answer is: Radiant floor heating

Question **10**
Not answered
Marked out of 1.00
Flag question

Question text

How does the human body release heat ?

Select one:

a.
By evaporation, conduction, convection and radiation

b.
By convection and conduction only

c.
By convection and radiation only

d.
By conduction, convection and radiation only

Feedback

Your answer is incorrect.

The correct answer is: By evaporation, conduction, convection and radiation

Question **11**
Not answered
Marked out of 1.00
Flag question

Question text

What causes an occupant in a room to feel cold when the air temperature is 70 °F?

Select one:

a.
The floor temperature is too low

b.
Warm air rises to the ceiling

c.
Cool surrounding objects rob heat from the person’s body

d.
Warm objects radiate heat into the space

Feedback

Your answer is incorrect.

The correct answer is: Cool surrounding objects rob heat from the person’s body

Question **12**
Not answered
Marked out of 1.00
Flag question

Question text

Why is a set-back thermostat not recommended in a radiant floor heating system ?

Select one:
a.
Radiant floor heating is designed to maintain a set temperature and responds slowly

b.
Set-back thermostats short-cycle the heating system

c.
A set-back thermostat will overheat the room

d.
A set-back thermostat works better with radiant floor systems than with any other system

Feedback

Your answer is incorrect.

The correct answer is: Radiant floor heating is designed to maintain a set temperature and responds slowly

Question **13**
Not answered
Marked out of 1.00
Flag question

Question text

What provisions must be made when a hydronic heating system is installed in a building?

Select one:
a.
Forced-air system for supplemental heat

b.
A means of exchanging air within the building

c.
Ceiling fans to move the air in the room

d.

Windows to reduce heat transfer

Feedback

Your answer is incorrect.

The correct answer is: A means of exchanging air within the building

Question **14**
Not answered
Marked out of 1.00
Flag question

Question text

Properly designed radiant floor heating can be used in which types of heating application(s)?

Select one:
a.
Residential, commercial, industrial, agricultural, snow-melt and sports fields

b.
Limited to residential applications

c.
Commercial

d.
Snow melt systems only

Feedback

Your answer is incorrect.

The correct answer is: Residential, commercial, industrial, agricultural, snow-melt and sports fields

Question **15**
Not answered
Marked out of 1.00
Flag question

Question text

Which heating system best suits an application that requires minimal air movement?

Select one:
a.
Radiant floor heating system

b.
Forced-air furnace

c.

Boiler with a fan-coil unit

d.
Forced convector unit

Feedback

Your answer is incorrect.

The correct answer is: Radiant floor heating system

Question **16**
Not answered
Marked out of 1.00
Flag question

Question text

What are the three categories of piping installed in a radiant floor heating system ?

Select one:
a.
Metallic, synthetic and composite

b.
Aluminum, copper and steel

c.
Galvanized steel, poly B and neoprene

d.
Steel, PVC and cast iron

Feedback

Your answer is incorrect.

The correct answer is: Metallic, synthetic and composite

Question **17**
Not answered
Marked out of 1.00
Flag question

Question text

Which tubing must have a protective coating or barrier to prevent oxygen permeation when installed in a radiant floor heating system?

Select one:
a.
Stainless tubing

b.
Copper tubing

c.
Cross-linked polyethylene PEX

d.
Aluminum tubing

Feedback

Your answer is incorrect.

The correct answer is: Cross-linked polyethylene PEX

Question **18**
Not answered
Marked out of 1.00
Flag question

Question text

Composite tubing installed in a radiant floor heating system is made up of what types of material ?

Select one:
a.
Aluminum coated with copper
b.
Copper with a plastic liner

c.
Aluminum sandwiched between two layers of plastic

d.
Copper with a steel liner

Feedback

Your answer is incorrect.

The correct answer is: Aluminum sandwiched between two layers of plastic

Question **19**
Not answered
Marked out of 1.00
Flag question

Question text

What will happen if the tubing is too small or the length is excessively long ?

Select one:
a.
An increase in flow rate

b.

Water pulsating in the tubing

c.
A reduction in flow rate

d.
Turbulent flow

Feedback

Your answer is incorrect.

The correct answer is: A reduction in flow rate

Question **20**
Not answered
Marked out of 1.00
Flag question

Question text

What is the manufacturer’s recommended maximum length for 1/2 PEX tubing ?

Select one:
a.
300 ft

b.
250 ft

c.
500 ft

d.
200 ft

Feedback

Your answer is incorrect.

The correct answer is: 300 ft

Question **21**
Not answered
Marked out of 1.00
Flag question

Question text

What is the main function of a manifold in a radiant floor heating system ?

Select one:
a.
To prevent excessively long circuits

b.

To increase velocity in the circuits

c.
To allow for the expansion of hot water

d.
To add chemical treatment to the system

Feedback

Your answer is incorrect.

The correct answer is: To prevent excessively long circuits

Question **22**
Not answered
Marked out of 1.00
Flag question

Question text

The manifolds installed in a radiant floor heating system are constructed of what type of material?

Select one:
a.
Steel, copper and plastic

b.
Aluminum, plastic and brass

c.
Copper, brass and plastic

d.
Copper, aluminum and steel

Feedback

Your answer is incorrect.

The correct answer is: Copper, brass and plastic

Question **23**
Not answered
Marked out of 1.00
Flag question

Question text

What is the function of a balancing valve on a manifold?

Select one:
a.
To ensure equal flow rate to each circuit

b.
To balance excessive pressure in the manifold

c.
To reduce the flow in the return line

d.
To stop water flow to the manifold

Feedback

Your answer is incorrect.

The correct answer is: To ensure equal flow rate to each circuit

Question **24**
Not answered
Marked out of 1.00
Flag question

Question text

To ensure that all circuits are evenly balanced, what is the recommended maximum difference between the longest circuit and the shortest circuit?

Select one:
a.
10 percent

b.
20 percent

c.
30 percent

d.
40 percent

Feedback

Your answer is incorrect.

The correct answer is: 10 percent

Question **25**
Not answered
Marked out of 1.00
Flag question

Question text

What is the CSA Standard B214-01 Installation Code maximum floor temperature for an area in which people stand for a long period?

Select one:

a.
35 °C (95 °F)

b.
31 °C (88 °F)

c.
25 °C (77 °F)

d.
33 °C (91 °F)

Feedback

Your answer is incorrect.

The correct answer is: 25 °C (77 °F)

Question **26**
Not answered
Marked out of 1.00
Flag question

Question text

Why is it critical to check with flooring manufacturers before installing tubing below their product?

Select one:
a.
The excessive moisture may damage the floor

b.
All building products can withstand high temperatures

c.
The floor temperature may be too high and cause damage to the floor covering

d.
There is no need to check with manufacturers

Feedback

Your answer is incorrect.

The correct answer is: The floor temperature may be too high and cause damage to the floor covering

Question **27**
Not answered
Marked out of 1.00
Flag question

Question text

What is the effect of a floor covering with a high R-value?

Select one:
a.
It increases the transfer rate through the floor

b.
It decreases the transfer rate through the floor

c.
It makes for a softer floor

d.
It has no direct effect on the radiant floor heating system

Feedback

Your answer is incorrect.

The correct answer is: It decreases the transfer rate through the floor

Question **28**
Not answered
Marked out of 1.00
Flag question

Question text

Radiant floor heating typically operates at temperatures lower than which of the following?

Select one:
a.
150 °F

b.
140 °F

c.
160 °F

d.
170 °F

Feedback

Your answer is incorrect.

The correct answer is: 140 °F

Question **29**
Not answered
Marked out of 1.00
Flag question

Question text

Who or what determines the indoor design temperature in a residence ?

Select one:
a.
The floor coverings

b.
The number of windows

c.
The occupants

d.
The wall structure

Feedback

Your answer is incorrect.

The correct answer is: The occupants

Question **30**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following best defines exfiltration?

Select one:
a.
Heat transfer through a solid object

b.
Air entering a building envelope through cracks and openings

c.
Air being circulated through the space by the furnace

d.
Air exiting a building envelope through cracks and openings

Feedback

Your answer is incorrect.

The correct answer is: Air exiting a building envelope through cracks and openings

Question **31**
Not answered
Marked out of 1.00
Flag question

Question text

What is required before an accurate heat loss calculation can be done?

Select one:
a.
A list of the floor coverings that will be installed

b.
The total number of doors on the exterior walls

c.
A set of drawings showing where the windows are located

d.
A complete set of building drawings, including specifications on building construction

Feedback

Your answer is incorrect.

The correct answer is: A complete set of building drawings, including specifications on building construction

Question **32**
Not answered
Marked out of 1.00
Flag question

Question text

Which of the following is the difference between the indoor design temperature and the outdoor design temperature?

Select one:
a.
The floor surface temperature

b.
The heating Delta T
c.
The boiler water temperature

d.
Design temperature difference

Feedback

Your answer is incorrect.

The correct answer is: Design temperature difference

Question **33**
Not answered
Marked out of 1.00
Flag question

Question text

What is the recommendation when dimensioning a room?

Select one:

a.

Round down to the nearest foot

b.

Round up to the nearest foot

c.

Do not change the dimensions

d.

Round up or down to the nearest 0.25 of a foot

Feedback

Your answer is incorrect.

The correct answer is: Round up or down to the nearest 0.25 of a foot

Question **34**

Not answered

Marked out of 1.00

Flag question

Question text

Which of the following would give the greatest amount of information on the wall construction?

Select one:

a.

The plan view

b.

The south elevation

c.

The north elevation

d.

The cross-section view

Feedback

Your answer is incorrect.

The correct answer is: The cross-section view

Question **35**

Not answered

Marked out of 1.00

Flag question

Question text

Length, width and height are used to calculate which of the following?

Select one:

a.
The wall area of the room

b.
British thermal units

c.
Transmission

d.
Infiltration

Feedback

Your answer is incorrect.

The correct answer is: Infiltration

Question **36**

Not answered
Marked out of 1.00
Flag question

Question text

An exterior wall is 15 ft long and 8 ft. high with a U-factor of 0.058 and a DTD of 100 °F, what is the heat loss in Btu’s?

Select one:

a.
969 Btu's

b.
696 Btu's

c.
996 Btu's

d.
669 Btu's

Feedback

Your answer is incorrect.

The correct answer is: 696 Btu's

Question **37**

Not answered
Marked out of 1.00
Flag question

Question text

What is the U-value of a wall with a total R-value of 23.25 ?

Select one:

a.
0.043

b.
4.30

c.
43.0

d.
0.430

Feedback

Your answer is incorrect.

The correct answer is: 0.043

What appliance is allowed to be fired before being passed or the inspection waived that requires an installation permit?

a.
Any direct fired equipment

b.
A commercial or industrial conversion burner

c.
A forced draft appliance under 409600 BTU/HR (120 kw)

d.
Any direct-fired non-recirculating type make -up heater

Feedback

Your answer is incorrect.

GSR Section 26 (20)

The correct answer is:
A forced draft appliance under 409600 BTU/HR (120 kw)

Question **2**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

What is the purpose of an excess flow valve?

a.
A valve designed to close when the liquid or vapor passing through it exceeds a prescribed flow rate

b.
A pressure relief valve installed in a liquid propane line

c.
A valve that is normally closed and allows flow in only one direction

d.
An automatic valve that has a closing time of less than 5 seconds upon being de-energized

Feedback

Your answer is correct.

CSA B149.2-20

The correct answer is:
A valve designed to close when the liquid or vapor passing through it exceeds a prescribed flow rate

Question **3**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

What is required when air or oxygen or another gas under pressure is used in connection with the gas supply?

a.
Regulator located on each line

b.
A back valve flow to maintained the correct flow rate

c.
A check valve located as close as possible to the tanks

d.
A back check valve as close as practicable to the point of interconnection

Feedback

Your answer is incorrect.

CSA B149.1-20 – 6.8.5

The correct answer is:
A back check valve as close as practicable to the point of interconnection

Question **4**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

What may be attached to an operating permit issued by a safety officer?

a.
Terms and conditions

b.
Business license

c.
Inspection notice

d.
A bond for the permit

Feedback

Your answer is correct.

SSA Section 28 (2)

The correct answer is:
Terms and conditions

Question **5**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

What does the scope of the B149.2 code apply to?

a.
Propane used on boats

b.
Utility pipeline distribution and transmission pipelines

c.
The storage, handling and transfer of propane

d.
Marine or pipeline terminals

Feedback

Your answer is correct.

CSA B149.2 – 1.1

The correct answer is:
The storage, handling and transfer of propane

Question **6**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

How shall the liquid contents from a propane container be removed for the purpose of being repaired, requalified or scrapped?

a.
Under the approval of the AHJ

b.
It can't be repaired or requalified

c.
Content does not have to be removed before requalifying or scrapping

d.
By flaring or transferring to another container

Feedback

Your answer is correct.

CSA B149.2 – 5.2.9

The correct answer is:
By flaring or transferring to another container

Question **7**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

What is required on the return line from pumps, meters, or dispensing devices when connected to the liquid space of a tank?

a.
Back check valve

b.
Hydrostatic relief valve

c.

Excess flow valve

d.
Emergency relief valve

Feedback

Your answer is correct.

CSA B149.2 – 7.1.12

The correct answer is:
Back check valve

Question **8**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

The responsibility for pressure testing the gas system to ensure that the piping or tubing is gas tight before leaving the installation fall upon?

a.
Owner

b.
Contractor

c.
Inspector

d.
Installer

Feedback

Your answer is correct.

CSA B149.1 – 20 – 4.3.7

The correct answer is:
Installer

Question **9**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

What type of valve is required that is located outside the protected area to protect an exhaust system not provided with a flame safe guard system that operates the fire-extinguishing system?

a.
An automatic electrically operated fast-closing valve provided with a remote automatic function to open

b.
An automatic electrically operated fast-closing valve of the auto-reset type

c.
An approved automatic non-electric fast-closing valve of the manual-reset type

d.
An approved mechanical non-electric fast-closing valve of the manual-reset type

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – 4.19

The correct answer is:
An approved mechanical non-electric fast-closing valve of the manual-reset type

Question **10**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

What is the maximum capacity for a non-refillable type (TC-39, TC-2P and, TC-2Q) commonly referred to as “single-trip” propane cylinder?

a.
16 oz

b.
20 0z

c.
18 oz

d.
14 oz

Feedback

Your answer is incorrect.

CSA B149.2 – Annex o 0.1.4

The correct answer is:
16 oz

Question **11**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

What is the minimum distance that posts and guardrails used for the protection of tanks be located between the point of transfer or cylinder-filling scale and any source of ignition including vehicles?

a.
3.5 ft

b.
3 ft

c.
50 ft

d.
10 ft

Feedback

Your answer is incorrect.

CSA B149.2 – 20 – 7.19.4.3

The correct answer is:
3.5 ft

Question **12**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

In to what circuit shall an air-flow sensing device be installed when the air is supply by mechanical means

a.
Wired in to the safety limit circuit of the primary safety control

b.
Wired in to the control circuit of the primary safety control

c.

Wired in to the safety limit control of the secondary safety control

d.
Wired in to the fan or blower in the primary control circuit

Feedback

Your answer is incorrect.

CSA B149.1 -20 – 8.8.1

The correct answer is:
Wired in to the safety limit circuit of the primary safety control

Question **13**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

What type of spillage-susceptible appliances would be sized on the depressurization column in the B 149.1 – 20 code book and has a maximum building depressurization of?

a.
Natural – draft at 0.02 in w.c. or (5 Pa)

b.
Mechanical Burners at 1 in w.c. (250 pa)

c.
Force – draft at 0.2 in w.c. or (50pa)

d.
Spillage-susceptible at 0.02 in w.c. or (5 Pa)

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – Annex C C.1.2

The correct answer is:
Spillage-susceptible at 0.02 in w.c. or (5 Pa)

Question **14**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

A draft regulator shall not be used as a substitute for a:

a.
Vent connector

b.
Flue collar

c.
Barometric damper

d.
Draft hood

Feedback

Your answer is correct.

CSA B149.1 – 20 – 8.23.8

The correct answer is:
Draft hood

Question **15**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

Unless certified what is the gauge thickness of a 7-inch diameter vent connector that serves an appliance with a draft hood?

a.
No. 26

b.
No. 20

c.
No. 28

d.
No. 24

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – 8.18.3

The correct answer is:
No. 26

Question **16**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

When converting an oil-fired furnace in a mobile home to gas, the conversion shall be?

a.
Manufacturer’s certified conversion package

b.
Correctly positioned to create flame impingement

c.
Able to meet furnace burner specification when altered

d.
Adjusted to exceed furnace manufacturer’s firing rate requirements

Feedback

Your answer is correct.

CSA B149.1 – 20 – 7.7.2

The correct answer is:
Manufacturer’s certified conversion package

Question **17**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

How would you calculate the mechanical air supplied to a fan-assisted furnace that was located 90 feet from an outside wall?

a.
Volume of air = 400 cfm * tons

b.
Volume of air = length * area * BTU’S

c.
30 cubic meters of air for each 1000 BTU/HR

d.
30 cubic feet of air for each 1 MBH

Feedback

Your answer is incorrect.

GSR Schedule section 8.8.3

The correct answer is:
30 cubic feet of air for each 1 MBH

Question **18**

Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

How would you calculate the total volume of replacement air for a spray booth?

a.
Equal to the one and a half times the exhaust capacity of the booth

b.
Not to exceed the total exhaust capacity of the booth

c.
Not to exceed the total volume of the booth

d.
Equal to the one and a half times the volume of the booth

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – 7.20.4

The correct answer is:
Not to exceed the total exhaust capacity of the booth

Question **19**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

Where a meter is not provided, what would be the increment reading for a pressure gauge if the system working pressure exceeding 0 .5 Psig (3.5 kpa) but does not exceed 5 Psig (35 kpa)?

a.
Not greater than 1″ w.c. (250 pa)

b.
Not greater than 2 psig (14 kpa)

c.
Not more than 2% of maximum dial reading

d.
Not greater that 2″ w.c. (0.5 kpa)

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – 6.22.3

The correct answer is:
Not greater that 2" w.c. (0.5 kpa)

Question **20**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

When any part of a piping system is to be enclosed or concealed, what test shall precede the work of closing in?

a.
Each appliance connection, valve, valve train and system component shall be checked while under normal operating pressure

b.
An addition to the existing piping or tubing system shall be tested as a complete system

c.
Before an appliance is connected, fittings or joints shall be pressure tested using either air, inert gas, or carbon dioxide

d.
The source of the test pressure shall be isolated while the piping or tubing system is under test

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – 6.22.5

The correct answer is:
Before an appliance is connected, fittings or joints shall be pressure tested using either air, inert gas, or carbon dioxide

Question **21**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

What table is used to determine the minimum duration required to retain the test pressure without showing a drop in pressure?

a.
Table 5.1

b.
Table 4.1

c.
Table 8.1

d.
Table 6.3

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – 6.22.1

The correct answer is:
Table 6.3

Question **22**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

What must be done when installing an appliance to an existing system that causes the system’s total connected load to be greater than 45 kw?

a.
Apply code clause 6.22.4 (addition to existing piping system)

b.
Resize the gas pipe to accommodate the extra load

c.
First give notice to the gas company

d.
Nothing, 45 kw is a low volume installation

Feedback

Your answer is correct.

GSR Section 59

The correct answer is:
First give notice to the gas company

Question **23**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

When an appliance is converted from the gas or fuel specified on the nameplate, without the use of the manufacturer's instruction the converted appliance shall be approved by?

a.
Gas fitter

b.
Contractor

c.
Manufacturer

d.
Authority having jurisdiction

Feedback

Your answer is correct.

CSA B149.1 – 20 – 4.5.3

The correct answer is:
Authority having jurisdiction

Question **24**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

A gas supply system to an apartment building was turned off for safety reasons, it has been determined that it is safe to turn it back on. What would the first step be before turning on gas supply system?

a.
Checks outlets and pilots one at a time

b.
Notify all affected consumers

c.
Turn off outlet one at a time

d.
Relight pilot one at a time

Feedback

Your answer is correct.

GSR Section 53

The correct answer is:

Notify all affected consumers

Question **25**

Incorrect

Mark 0.0 out of 1.0

Flag question

Question text

An existing 3-inch piping system that is 50 feet long is removed for repair. What is the requirement?

a.
Shall be isolated and purged with an inert gas

b.
Shall be isolated and purged with oxygen

c.
Shall be continuously attended while being purged

d.
No action is required

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – 6.23.3

The correct answer is:
Shall be isolated and purged with an inert gas

Question **26**

Incorrect

Mark 0.0 out of 1.0

Flag question

Question text

A propane-fired furnace is to be converted to natural gas, the responsibility of the installer is to advise the user at the time of installation to do which of the following?

a.
Call for inspection.

b.
Shut off the power supply, and remove all associated equipment.

c.
Shut off cylinder or tank valve, and disconnect and cap off or plug the old system outdoors.

d.
Remove the fill pipe from service.

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – 4.3.5. b)

The correct answer is:
Shut off cylinder or tank valve, and disconnect and cap off or plug the old system outdoors.

Question **27**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

For a 60-foot run of 1-inch NPS operating at 7-inch w.c. By how much may the purge time be exceeded?

a.
Not more than 53 seconds

b.
Not more than 10 seconds

c.
Not more than 43 seconds

d.
No maximum time

Feedback

Your answer is incorrect.

CSA B149.1 – 20 – Annex H

The correct answer is:
Not more than 10 seconds

Question **28**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

Before leaving an installation who is responsible for the safe working operation of the appliance?

a.
The gas fitter that installed the appliance.

b.
The authority having jurisdiction

c.
The person initially activating the appliance.

d.
The contractor that pulled the permit

Feedback

Your answer is correct.

CSA B149.1 – 20 – 4.3.1

The correct answer is:
The person initially activating the appliance.

Question **29**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

If you find an appliance that is beyond repair, you are to place the appliance out of service and promptly notify which of the following?

a.
The safety officer in a written statement setting out the facts.

b.
The owner verbally, promptly confirmed by a written statement setting out the facts.

c.
The safety officer verbally, excusing a written statement setting out the facts.

d.
The manufacture of the appliance in a written statement setting out the facts.

Feedback

Your answer is incorrect.

GSR Section 54

The correct answer is:
The safety officer in a written statement setting out the facts.

Question **30**
Incorrect
Mark 0.0 out of 1.0
Flag question

Question text

When determining the total volume of gas required based on a percentage of the total volume, what must be known?

a.
The diversity of the type of loads to the satisfaction of the appliance manufacturers

b.
The diversity of the load to the satisfaction of the appliance manufacturers

c.
The diversity of the type of loads to the satisfaction of the engineer

d.
The diversity of the load to the satisfaction of the authority having jurisdiction

Feedback

Your answer is incorrect.

CSA B149.1 -20 – 6.4.3

The correct answer is:
The diversity of the load to the satisfaction of the authority having jurisdiction

Question **31**
Correct
Mark 1.0 out of 1.0
Flag question

Question text

What are the requirements for which an individual is permitted to inspect regulated work concerning propane storage tanks that are required to have an operating permit?

a.
Shall hold a valid class B certificate of qualification

b.
Reserve permission from authority having jurisdiction

c.
A person must have successful completion of an inspection training program

d.
Shall be trained and competent in the gas fitting trade.

Feedback

Your answer is correct.

Directive D – BP-2016-01

The correct answer is:
A person must have successful completion of an inspection training program

Which of the following is not a type of burner orifice ?

Select one:
a.
Modulating

b.
Fixed

c.
Adjustable

d.
Cap / Universal

Feedback

Your answer is incorrect.

The correct answer is: Modulating

Question **2**

Not answered
Marked out of 1.00
Flag question

Question text

Which orifice would be used in a DUAL FUEL appliance (natural gas / propane) ?

Select one:
a.
Modulating

b.
Cap / Universal

c.
Adjustable

d.
Fixed

Feedback

Your answer is incorrect.

The correct answer is: Cap / Universal

Question **3**

Not answered
Marked out of 1.00
Flag question

Question text

Referencing the multiplier table A.15 (B149.1 Gas Code)

What is the multiplier for air ?

Select one:
a.
0.775

b.
Not listed

c.
0.6

d.
1

Feedback

Your answer is incorrect.

The correct answer is: 0.775

Question **4**
Not answered
Marked out of 1.00
Flag question

Question text

What size orifices would be required to fire a 65000 BTUH (natural gas) furnace with 3 burners at 3.5 inches water column manifold pressure ? **(Use the B.149.1 I Tables)**

Select one:
a.
42

b.
43

c.
3/32 inch

d.
44

Feedback

Your answer is incorrect.

65000 ÷ 3 burner = 21667 / Per burner

21667 btuh @ 3.5 inch WC = 43 (20265 btuh)

The correct answer is: 43

Question **5**Question text

Calculate the orifice flow rate and size for each of the following appliances (use 1000 BTU/cubic ft for cal. value)

Manifold Pressure	**Number of Orifices**	**Appliance Input (Btuh)**	**Required CFH Rating Per Orifice**	**Orifice Size**
5" w.c.	2	43,000	21.552.098.033	#47#34#30
4" w.c.	3	156,000	98.052.021.533	#37#34#30
3" w.c.	6	198,000	3321.598.052.0	#34#30#47
7" w.c.	3	294,000	98.03352.021.5	1/8 in.5/32 in.3/16 in

Feedback

Your answer is incorrect.

The correct answer is:
Calculate the orifice flow rate and size for each of the following appliances (use 1000 BTU/cubic ft for cal. value)

Manifold Pressure	**Number of Orifices**	**Appliance Input (Btuh)**	**Required CFH Rating Per Orifice**	**Orifice Size**
5" w.c.	2	43,000	[21.5]	[#47]
4" w.c.	3	156,000	[52.0]	[#30]
3" w.c.	6	198,000	[33]	[#34]
7" w.c.	3	294,000	[98.0]	[5/32 in.]

Question text

An appliance is found to have a #49 orifice installed in each of its 4 burners. If fired on C_4H_{10} at 11 in. w.c. What would the input be? Answer Btuh **(Use the B.149.1 I Tables)**

Feedback

The correct answer is: 169056

Question text

To change the fuel on an appliance from natural gas to propane which of the following would be done ?

Select one:

a.
Install larger orifice , decrease manifold pressure

b.
Install smaller orifices , increase manifold pressure

c.
Install larger orifice , increase manifold pressure

d.
Install smaller orifice , decrease manifold pressure

Feedback

Your answer is incorrect.

The correct answer is: Install smaller orifices , increase manifold pressure

Question text

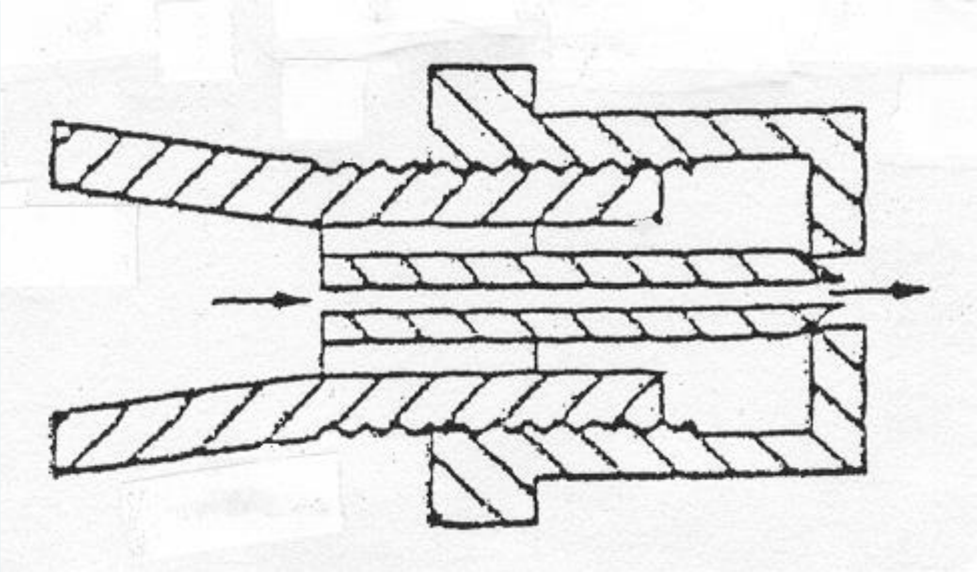
An appliance with 5 burners is using propane at 11 inches w.c. manifold pressure. The orifice size used is found to be a #50. What would the input to this appliance be? Answer Btuh **(Use the B.149.1 I tables)**

Feedback

The correct answer is: 173465

Question text

In the diagram below, the device shown is:



Select one:
a.
a universal main burner orifice adjusted for propane operation

b.
a spud type pilot orifice

c.
an insert type pilot orifice

d.
a universal main burner orifice adjusted for natural gas operation

Feedback

Your answer is incorrect.

The correct answer is: a universal main burner orifice adjusted for propane operation

Question text

If the cross-sectional area of an orifice is doubled, the flow rate will be increased by:

Select one:
a.
eight times the original flow rate

b.
half the original flow rate

c.
four times the original flow rate

d.
twice the original flow rate

Feedback

Your answer is incorrect.

The correct answer is: twice the original flow rate

Question text

A natural gas boiler is equipped with 20 burners and fires at a manifold pressure of 3.5 in. w.c. It is determined with the use of orifice drills that each orifice is a #50. The calorific value of gas burned is 1,000 $\mathrm{Btu}/\mathrm{Ft.}_{3}$$Btu/Ft.3$. The firing rate of the boiler will be closest to: **(Use Table 2 in PDF)**

Select one:

a.
257,000 Btuh

b.
278,000 Btuh

c.
15,000 Btuh

d.
252000 Btuh

Feedback

Your answer is incorrect.

Natural Gas #50 @ 3.5" w.c. = $13.87_{\mathrm{CFHorifice}}$$13.87CFHorifice$
Input
= $13.87_{\mathrm{CFHorifice}}\times 20\ \mathrm{Burners}\times 1{,}000_{\mathrm{Btuft.}3}$$13.87CFHorifice \times 20\ Burners \times 1{,}000Btuft.3$

The correct answer is: 278,000 Btuh

Question text

A Natural Gas appliance has a ***rated*** input of 140 MBH. If the appliance has four burners and operates at a manifold pressure of 7 inches water column, the correct orifice to fire the appliance to its rated input would be:

Select one:

a.
#41

b.
#43

c.
#13

d.

#42

Feedback

Your answer is incorrect.

140,000Btuh1,000Btuft.3÷4 Burners=35CFHorifice140,000*Btuh*1,000*Btuft*.3÷4 *Burners*=35*CFHorifice*
35CFHorifice@7"w.c.35*CFHorifice*@7"*w.c.* = # 43

The correct answer is: #43

Question text

An appliance ***rated*** at 375 MBH which is operated on propane, has four burners fired at 11 inches water column manifold pressure. Select the orifices required:

Select one:
a.
#54

b.
#34

c.
1/8"

d.
3/16"

Feedback

Your answer is incorrect.

375,000Btuh2,500Btuft.3÷4 Burners=37.5CFHorifice375,000*Btuh*2,500*Btuft*.3÷4 *Burners*=37.5*CFHorifice*
37.5CFHorifice@11"w.c.=37.5*CFHorifice*@11"*w.c.*= #34

The correct answer is: #34

Question text

Which orifice would have the highest flow rate?

Select one:
a.
#24 @ 3 inches water column

b.
#25 @ 3 inches water column

c.
#24 @ 4 inches water column

d.

#25 @ 4 inches water column

Feedback

Your answer is incorrect.

The correct answer is: #24 @ 4 inches water column

Question text

An appliance has a high altitude rating of 245,500 Btuh and a sea level rating of 337,750 Btuh. Match the calculated de-rated inputs to the given elevations if they were installed at these elevations.

2,100 Ft.	Answer 1Choose...245,500 Btuh216,040 Btuh186,580 Btuh337,750 Btuh
375 Ft.	Answer 2Choose...245,500 Btuh216,040 Btuh186,580 Btuh337,750 Btuh
6,600 Ft.	Answer 3Choose...245,500 Btuh216,040 Btuh186,580 Btuh337,750 Btuh
9,600 Ft.	Answer 4Choose...245,500 Btuh216,040 Btuh186,580 Btuh337,750 Btuh

Feedback

Your answer is incorrect.

The correct answer is: 2,100 Ft. → 245,500 Btuh, 375 Ft. → 337,750 Btuh, 6,600 Ft. → 216,040 Btuh, 9,600 Ft. → 186,580 Btuh

Question text

A boiler certified for high altitude is installed at an elevation of 5,500 feet. The rating plate indicates a sea level rating of 150,000 Btuh and a high altitude rating of 130,000 Btuh. The boiler should be adjusted to an input of:

Select one:
a.
109,200 Btuh

b.
150,000 Btuh

c.
124,800 Btuh

d.
130,000 Btuh

Feedback

Your answer is incorrect.

130,000 Btuh - 4% = 124,800 Btuh

The correct answer is: 124,800 Btuh

Question text

To double the gas flow through the orifice of an atmospheric burner, the manifold pressure shall be increased by:

Select one:
a.
four times

b.
double

c.
50%

d.
three times

Feedback

Your answer is incorrect.

Q=ΔP−−−√Q=ΔP
2$_2$=ΔP22=ΔP
4=ΔP4=ΔP

The correct answer is: four times

Which type of gas meter would be suited for applications requiring a gas pressure rating of 300 or more PSIG?

Select one:
a.
All meters can easily handle 300 PSIG or more

b.
Turbine meter

c.
Rotary meter

d.
Diaphragm meter

Feedback

Your answer is incorrect.

The correct answer is: Turbine meter

Question text

Which type of gas meter is used mostly in residential markets?

Answer:

Feedback

Diaphragm or Bellows

The correct answer is: Diaphragm

Question text

Which of the following is not a function of the gas meter ?

Select one:
a.
Measuring input to appliances within building

b.
Measuring Gas pressure

c.
Identifying leaks

d.
Measuring Gas consumption

Feedback

Your answer is incorrect.

The correct answer is: Measuring Gas pressure

Question text

If no appliances in the building are firing and the gas meter is moving what can be assumed ?

Select one:
a.
The gas meter is faulty

b.
The service regulator has failed

c.
The line pressure regulator has been left on

d.
There is a leak somewhere in the system

Feedback

Your answer is incorrect.

The correct answer is: There is a leak somewhere in the system

Question text

The main purpose of a gas meter is to:

Select one:

a.
prevent excessive gas flow to the system

b.
restrict the flow of gas to the system

c.
measure and record the gas flow

d.
test the system for leaks

Feedback

Your answer is incorrect.

The correct answer is: measure and record the gas flow

QuestiBellows-type gas meters are installed on:

Select one:
a.
industrial systems only

b.
domestic and commercial systems

c.
domestic system only

d.
industrial and commercial system

Feedback

Your answer is incorrect.

The correct answer is: domestic and commercial systems

Question text

Diaphragm meters can typically service systems up to a maximum flow capacity of __________.

Select one:
a.
5000 CFH

b.
1500 CFH

c.
1000 CFH

d.

15 000 CFH

Feedback

Your answer is incorrect.

The correct answer is: 5000 CFH

Question text

Test dials on meters can be used to do which of the following.

Select one:
a.
To monitor and record flow rate.

b.
To determine the amount of gas consumed over a large period of time.

c.
To test for leaks in the system.

d.
To test the meter for proper operation.

Feedback

Your answer is incorrect.

The correct answer is: To test for leaks in the system.